Rock Products

DEVOTED TO THE PRODUCTION OF ROCK AND ITS PRODUCTS

Vol. V. No. 16. LOUISVILLE, KY., JULY 22, 1906. MANUFACTURED PRODUCTS AND CONCRETE EDITION

W

Ea

Ju
St
a
ha
an
to
na
bui
So
the
dis
wer
mo
tha
ing
tio
T
tim
this
beg
bloc
New

Rock Products

DEVOTED TO THE PRODUCTION OF ROCK AND ITS PRODUCTS

Vol. V. No. 16. LOUISVILLE, KY., JULY 22, 1906. MANUFACTURED PRODUCTS AND CONCRETE EDITION

CONCRETE IN SYRACUSE.

Early Beginnings and Present Advancement of the Industry.

SYRACUSE, N. Y., July 19.—Thirty-five years ago, Justus Newell, manager of the old South Salina Street horse-car line, conceived the idea of erecting a building out of concrete blocks. No such feat had been attempted in Syracuse up to that time and Mr. Newell has the credit of being the first to introduce crude solid blocks, using gravel and natural cement or water lime. He put up his building which is still standing at the corner of South Salina and Croton Streets and also made the foundation of a row of brick houses a short distance north of the concrete building. As time went on, these concrete blocks gathered so much moisture on account of their crude construction that boards were placed over them and the building now has the appearance of frame construction, only the older residents knowing its history.

That Mr. Newell was many years ahead of his time is evident, as nothing further was done in this line until 1904 when the Paragon Plaster Co. began to make a commercial concrete building block. Conditions have greatly changed since the Newell building was made. At that time, labor was cheap and Portland cement was selling for $4.00 a barrel, which led him to use water lime instead. Conditions have been exactly reversed at the present time. While labor is high Portland cement is comparatively cheap. The development of the concrete industry in Syracuse up to this year has been slow but it is now going ahead on a run. From foundations and crude factory buildings, the cement block companies are now putting up the more stylish and enduring constructions. Five times as many buildings of this character will be erected this year as last. One of the factors in the development has been the unwillingness of the contractors to put in bids for this kind of a building. The use of concrete has dawned on the contractors slowly but surely. In many cases, they have told prospective builders that they did not want to bid upon concrete work as it was something that they knew nothing about and were afraid to bid. They were also afraid of guaranteeing their work. This, however is being changed and the persons who want a building concrete are able to secure it.

A pioneer in artificial stone work is the Onondaga Litholite Co. which was organized in 1901 to make fancy specialties out of crushed stone and cement but which, however, did not put out a regular building block until after the Paragon Plaster Co. began the manufacture of sand-lime bricks which are rapidly becoming an important factor. In 1904, the Onondaga Pressed Stone Co. was organized and has already a long list of buildings to its credit. More recent additions to the fraternity are Joseph M. Hill, No. 123 Kirk Building and C. J. Sullivan, of Clinton Street. Mr. Sullivan recently installed a cement block plant but as yet has not had much time to devote to that branch of his business. Mr. Hill was formerly manager of the Onondaga Litholite Co., and like that concern is doing a large amount of sidewalk work. He also lays asbestolite flooring.

One of the most important factors in the concrete industry in Syracuse is the Consolidated Engineering and Construction Co., which puts up reinforced concrete buildings and constructs concrete bridges and dams. This concern is now at work upon Dormitory No. 1 at Syracuse University and has constructed the floors, stairs and stair supports out of concrete according to the Bush terminal system in which the ordinary stock round bar properly calculated to carry the load is used.

This building has five stories and an attic. It consists of two wings, 168 and 107 feet long, both 40 feet wide. The basement story is faced with Gouverneur marble, the upper stories with face brick and terra cotta. The roof will be a Mansard roof.

The most interesting part of the building is the floors, which are of reinforced concrete, a form of construction which lately has come into such great favor as to promise to entirely revolutionize building construction. It is well known that concrete offers a very large resistance to compression but comparatively small to tension. By reinforcing the concrete girders, having steel bars in the places where subjected to tension, which is the lower part of the girder, it is, however, possible to let the steel take the tension stresses and the concrete the compression stresses. This is what is termed reinforced concrete work, and the re-

(*Continued on page 33.*)

FIRST BAPTIST CHURCH. RESIDENCE OF HARRIET S. CURTIS.

STRIKING ILLUSTRATIONS OF CONCRETE CONSTRUCTION IN SYRACUSE, N. Y.

Rock Products

DEVOTED TO THE PRODUCTION OF ROCK AND ITS PRODUCTS

SEMI-MONTHLY.

Entered as second-class matter December 16, 1905, at the Post Office at Louisville, Ky., under Act of Congress of March 3, 1879.

THE FRANCIS PUBLISHING COMPANY,
Publishers.

E. H. DEFEBAUGH.....President.

A semi-monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganese, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

EDITORS.
E. H. DEFEBAUGH. FRED K. IRVINE.

ASSOCIATE EDITORS.
HENRY C. WHITAKER.....Barre, Vt.
ALEX. CRISTADORO.....New York.

Regular Staff Correspondents in the Principal Centers.

The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper; so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

"TELL 'EM YOU SAW IT IN ROCK PRODUCTS."

☞No contracts will be accepted with advertising agencies, as our system for promoting the interests of patrons requires direct co-operation.

☞Matter for publication to insure insertion in any given number must reach this office at least ten days preceding the date of the paper. This measure is made necessary by the rapid growth of circulation, taking more time in the printing department.

SUBSCRIPTION RATES, $2.00 per annum, postpaid anywhere in the United States, Canada or Mexico; $3.00 elsewhere in the Postal Union. Single copies, 10 cents.

ADVERTISING RATES will be furnished on application.

ADDRESS ALL COMMUNICATIONS TO
THE FRANCIS PUBLISHING COMPANY,
Main Street, Cor. Bullitt, LOUISVILLE, KENTUCKY.

BRANCHES:
NEW YORK OFFICE—Room 431, 136 Liberty Street.
CHICAGO OFFICE—Room 1312, Tribune Building.
NEW ENGLAND OFFICE—16 Merchant St., Barre, Vt.

LOUISVILLE, KY., JULY 22, 1906.

THE middle of the season has been reached in building lines, and again the car shortage presents itself as the period of crop moving approaches, and it might be well for the dealers to stock up. There is always a big rush right at the close, and the man who has the goods is the man who can make the sales.

THE natural rock cements of high quality are having an inning, and on account of the shortage of Portland cement a great many specifications have been modified so as to use a larger proportion of natural cement just to help the wheels of progress along and bring some of the large undertakings to completion with the close of activities this season.

THE National Association of Master Composition Roofers held a three days' session in Buffalo, on July 16, 17, 18. The largest season in the history of the roofing business is right before them for there are more square miles of roofs on new buildings just completed and approaching completion than ever before recorded. They got together in order to formulate adequate plans to take care of the largest proposition they have ever had to tackle, and they certainly accomplished something, for they worked hard at every session of the convention. A full report of the meeting appears on another page.

IT is peculiar that in some markets, it is almost impossible to introduce hydrated lime. The only possible objection is that it constitutes an apparent innovation, but the economy and enormous improvement should certainly offset such a visionary objection without much parley. Lime in the hydrated form offers such enormous advantages to the contractor and every other consumer that it is indeed surprising that it requires any effort to introduce it.

CEMENT building materials, both in the shape of hollow concrete building block and cement brick are being widely introduced throughout the Southern States. The objections that were first raised to such materials further north never could exist in the states that border on the Gulf, and naturally the popularity of cement building materials immediately takes hold as fast as they are introduced. Concrete houses with hollow walls are at once a remedy, and the solution for all the drawbacks to living in a semi-tropical climate. The present popularity is certain to grow and Southern markets will show a steady increase in the demand for cement from year to year by the natural growth of the country, for concrete will be the exclusive building material of the South before this condition will obtain in any other section of the country.

THE crusher man is still running his plant at the topnotch of capacity, and still he finds the volume of orders on his hook rather inclined to increase than to decrease. It is safe to say that more crushers will be operated as far into the winter as possible, than ever before. The only trouble that existed this year was the big contracts that were made early in the season, which are a thorn in the flesh to-day, for it hurts to deliver dollar stone for 65 cents, especially when the man with the dollar is begging you to give him "just a little bit." The crusher man will probably not be so ready to make big contracts next year, for he now realizes that the requirements of concrete contractors are quite as large a factor to his business as railroad ballast, which was originally his only outlet. A crusher plant with a good supply of quarry stock located close to any of the big cities, is an attractive investment these days.

THE sand-lime brick has taken its place among the face bricks handled by the dealers and is usually called "white face brick." A great many of them have been used this year for entire buildings, for fronts only, or in combination with other face brick to make the light contrasts. However used they are so giving very satisfactory results in almost every case, and some of the prettiest residences that have been erected this year have been faced with white brick. The long probationary period seems to be about over now and the confidence of the builder is well established in this product, but the prices that are being asked are in some cases higher than is justifiable where it is merely a matter of taste in replacing a face brick made of burned clay that is known to be of a high standard of quality. In fact little or nothing is gained upon the point of quality by using the sand-lime brick, and there is no reason why it should be quoted higher than other good facing material. If No. 1 white face brick were always quoted upon the same margin that other face brick are sold, they would probably be always a little under clay face brick quotations and thereby secure a fuller market.

THERE is no more important stock in trade for the dealer in builders' supplies than the equipment of teams and the wagons that deliver the goods. The warehouse is frequently located in an out of the way place in the railroad district of the city, and from the nature of the goods handled must have more or less of an unsightly appearance, but your teams thread their way through the busiest streets and the appearance of the team, the harness and the wagon properly lettered with your name and line of business, shows the character of man who is behind the gun. It does not cost much to wash the wagon off, to clean the harness or rub out the team, but, it makes the difference of appearance, and appearance is the first thing by which human beings have to judge one another. Then, too, the proper care of your team bears upon the important factor of prompt delivery, and it may be a convincing argument to a contractor who is in a hurry for his goods to hear a dealer say, "My teams are always in the pink of condition and I am always able to deliver a load of supplies upon the run if necessary to accommodate a customer."

THE cement brick made of sand and Portland cement which cut such a figure in the cement users' conventions earlier in the year has found a ready sale by those manufacturers who are willing to contract for laying them up in the walls, but there has not been any marked success in selling cement brick where the contractor had to purchase them, because the bricklayers in some localities seized upon the innovation of material to demand more money. There was no reason for any such demand, of course, but when the brick layer was asked to work on a kind of material new to him it provided an excuse, and in this way beat many a manufacturer of cement brick out of a profitable order.

In other places the brick masons preferred the cement brick after they had become accustomed to it, and so it goes. Every new building material must expect to find these obstacles and the manufacturer must be prepared not only to make a high quality of cement brick but to keep his courage up and contract for laying his brick if he finds it necessary. The cement brick is a reliable commodity that is well liked wherever used and on account of its cheapness and beauty is sure to win its way.

THE steadily advancing quotations of cement in the Lehigh Valley acts as a suggestion to the Western manufacturer. They add the price of transportation from the Lehigh Valley and quote higher prices also. The Western mills consequently get more for their cement than the mills in the valley who have the long haul against them in reaching the Western markets. The reason for this is that all the manufacturers of cement can dispose of their entire output as fast as they can produce it, and there never was a time that a man or a company was not willing to take all for his goods that the buyer is willing to pay. This is all right, both in fact and in principle, and it is the advantage of the Western manufacturer that he is able to deliver his goods closer to his mills, but there are cases where the Western manufacturer could well afford to do some fostering of the infant industries, which will soon be tremendous factors in the consumption of cement that are now sparring desperately for a foothold. The structural operations of the present year are phenomenal, and even on a basis of forty million barrels of production there will not be enough cement to go around. But every year is not a top-notcher and even the cement manufacturer may need the industries which are now mere fledglings.

From Our Own

Correspondents.

GREATER NEW YORK.

NEW YORK, N. Y., July 20.—Well wishers of the Bronx Borough have reason to be proud of the record of progress the borough has made during the first six months of 1906. Carpers and calamnity howlers who predicted that property owners would suffer this year in consequence of the great strides made during 1905, will find nothing in the official records to bear out their surmises. In every respect, except in the construction of big flats, the pace set a year ago has been lived up to thus far in 1906. The demand for improved and unimproved properties continues to be large and since January 1, close to two thousand building lots have been sold at public auction for close to $2,000,000.00.

This record has been made in spite of the incubus of the mortgage tax, a burden now almost wholly removed. There is no doubt that had it not been for agitation and uncertainty over this law the value of operations in the Bronx up to July 1 would have been greater than the records indicate.

Less activity than has prevailed during the spring is to be expected during the summer months, but there is little doubt that with the change in mortgage tax conditions that begins with the law that goes into force to-day there will be more inducements for builders to obtain loans than was the case a year ago. It would not be surprising, therefore, if the operations during the coming two months exceeded those of July and August, 1905.

During the six months just ended plans were filed for 1,219 new buildings, the estimated cost of which will be $15,832,045.00. In the first six months of 1905 the number of plans filed for Bronx buildings was 1,198 and the cost of the structures was $19,474,415.00. An analysis of these figures shows that the average cost of each building erected in the Bronx during the first half of the year 1905 was $16,305.00. The average cost of each building projected thus far this year is $12,987.00. This average difference in cost of $3,318.00 is due almost wholly to the fact that fewer flats and more one, two and three family houses are being erected this year than last.

The cost of labor is a trifle higher now than last year and the cost of frame building material is considerably higher than a year ago. The prices of brick, stone and mortar are about the same now as last year. Some time ago there was a slump in brick prices, but the strike in the spring and the increased demand has caused a sharp rally that has brought them up to last year's figures and in some cases beyond, despite the fact that the market is well stocked, but at the present writing brick has eased off again, and is now selling at $9.00 delivered. This is caused by the falling off in the demand, but this condition is not unusual as July and August are always more quiet than any other part of the year.

New Building Commission for Jersey City Open for Suggestions.

The commission appointed by the Board of Aldermen to prepare a new building ordinance for Jersey City, consisting of Messrs. Edlow W. Harrison, William Robertson, Jr., and Hugh Roberts is now at work. It recently organized by electing Mr. Roberts president and Mr. Robertson, Jr., secretary.

Before preparing the ordinance for submission to the Board of Aldermen it is the desire of the commission that full opportunity shall be given to all building organizations and all other parties interested in the matter to submit their suggestions to the commission for its consideration. The committee will hold many meetings in the near future, as the work involved in preparing this ordinance will be very great, it is hoped that all interested parties will endeavor to prepare their suggestions promptly so that they may be in the hands of the commission before its work has advanced very far.

The commission has selected Mr. Roberts' office, No. 1 Exchange Place, Jersey City, as its headquarters and any information concerning the work may be secured at that address.

Erecting Another Plant in New Jersey.

The Pensauken Brick Co., of Pensauken township, Camden, N. J., has made a contract with the Standard Brick Machinery Co., of 114-118 Liberty Street, to put up a plant for them under the Huennekes System, the initial contract called for a capacity of 18,000 which has since been increased to 36,000 bricks.

Northern Men Interested in Southern Brick Plant.

The Williamsburg Brick Co., of Williamsburg, Va., a new company recently incorporated with the following well known brick men as directors: Melville DeBaun, James Cathcart and Robt. T. Boyd; secretary, John B. Rose Brick Co., have their plant completed and are making and shipping brick to all markets. They have purchased twenty acres of fine clay land and their plant is equipped with the newest and best machinery obtainable. The brick is also of a very fine quality, and Mr. Boyd says they are looking forward to a very successful season.

Cement Sidewalks and City Water for This Tract.

The Lenox Park Realty Corporation has been organized with a capital of $150,000.00 for the purpose of developing a tract of property in Queens Borough, near Belmont Park. The officers of the company are Benjamin F. Knowles, president; Robert T. Stokes, vice president; Theodore J. Van Horen, treasurer. These interests are identical with those of the Jamaica Park South Realty Corporation. The latter company controls a large tract in the southern part of Jamaica, where streets have been laid out and cement sidewalks put down. City water is now being put through the property of the company.

Fraunces Tavern to Be Remodelled at a Cost of $50,000.00.

Plans have been filed with the Building Superintendent for the remodeling of Fraunce's Tavern, the historic five-story hotel at Broad and Pearl Streets, for the Sons of the Revolution.

The upper two stories are to be replaced by a mansard story and the facade rebuilt. The interior is to be remodeled in fire proof materials. The long room on the second floor, where Washington bade farewell to his officers, will be refitted and there will be a museum for Washington relics. The renovation is to cost $50,000.00.

Thompson-Starrett's Company Get $75,000.00 Bonus.

All records for quick construction were broken, it is said, by the Thompson-Starrett Co., of New York, in the construction of the great mercantile plant for Sears, Roebuck & Co., of Chicago, and a bonus of $75,000.00 was given the builders. It is not often that such a thing as this is done, and it is a graceful act by Richard W. Sears and his associates in a firm which started ten years ago with nothing and now does sixty million dollars' worth of business a year. Eighteen months ago ground was broken for the new plant which increasing business had made necessary. A year afterwards this plant was finished and occupied in its entirety. There are six buildings, occupying a good part of a site a half mile long by 700 feet wide, with a total floor area of fifty acres.

Seven thousand building mechanics were employed at one time on the group of structures. The buildings are remarkable for their architectural elegance. In the center of the plant a whole city block has been laid off in an Italian garden.

Resting Up After Many Years of Service.

Mr. Rudolph P. Miller, who has been chief engineer of the Building Department in Manhattan for many years, and who resigned on June 1, is away on an extended vacation, in quest of rest and recreation.

The Improved Hollow Concrete Stone Co. at Nordhoff, N. J.

The Improved Hollow Concrete Stone Co., of Nordhoff, N. J., has purchased an acre and a half of land adjoining its plant on which there is a very good sand pit which they will utilize to make hollow concrete blocks. They have just installed an "Ideal" machine, from the Ideal Concrete Machinery Co., of South Bend, Ind., and will begin work at once. They expect to turn out a fine 8x8x16 face stone brick, and anticipate no difficulty in disposing of all they can produce. Mr. John Schagner is president of the company and Mr. M. J. Donahue, of 500 West Thirty-fourth Street, New York, is secretary-treasurer. The plant is well situated on Sheffield Avenue, between Broad and Grand Avenues, and but a short distance from the Erie railroad station on one side and the Englewood Golf Club on the other. Nordhoff being a suburb of Englewood, is rapidly developing, if not enjoying a small sized building boom. Fourteen houses are in the course of erection now, the streets are all laid out, sewer mains, gas, electricity and cement sidewalks are some of the recent improvements made, with the result that houses and lots have increased in value, and home seekers and investors are beginning to take notice.

Biggest Lime Plant Yet for Peekskill, N. Y.

The Palmer Lime Co., of 149 Broadway, have tested the stone on their extensive property at Peekskill, N. Y., and have found it to contain a very excellent quality of building lime. On this property the company propose to build one of the largest lime plants in the United States, for the purpose of manufacturing lime for this and adjacent markets, work will be pushed rapidly as they expect to have it running to its full capacity by the first of next March.

The York, Pa., plant of this company is now complete and in full operation. They are planning to deliver their product in large quantities to New York and vicinity. This plant is also expected to take care of their large Southern trade. The company looks forward to a busy season.

Can't Keep Up With Orders at This Plant.

The Farnham "Cheshire" Lime Co., of 39 Cortlandt Street, report business as constantly increasing, their government and other large contracts, keep them steadily on the jump. They are at present thirty days behind on all orders

Hope to Start Up in Another Month.

The Hoosic Valley Lime and Marble Co., expected to be ready for business on July 15, but unforeseen difficulties have arisen to delay work and for that reason it may take another month

Unique Appearance of the New York Woman's Club.

One of the new buildings to shelter a woman's club is unique in appearance because it is built with the small ends of the bricks facing the street. Usually the bricks are laid lengthwise, but the novel effect in this new building is gained by the new device. Other houses made of bricks have used this effect for decoration, but no other building has been put up entirely in that way. The architects of this building, which is the only one in New York used for such a purpose, wanted to make it distinctive in appearance and hit on this idea, which for the present at least differentiates the facade from every other in town.

Shipping Dryers to Brazil.

Mr. D. P. Carritte, of the U. S. Drying Engineering Co., 66 Beaver Street, says they are putting up a glass-sand plant at Dundee, Ohio. They have also shipped a dryer with elevators and conveying machinery to Brazil for a new sand-lime brick plant. Mr. Carritte will leave here on July 23, on an extensive western trip.

A Few Remarks on the Building Situation.

Mr. Morton, of the Consolidated Rosendale Cement Co., 26 Cortlandt Street, says that business is quiet at present, due to the high price of brick and Portland cement, which is holding back work that otherwise would be under way now. Mr. Morton seems to think that these manufacturers are making a mistake, the labor troubles at the brick yards have been adjusted and there is no scarcity, for that reason, with the supply so near at hand the prices should soften very materially. On the other hand, sand-lime brick, cement blocks and other substitutes for the clay brick have an excellent chance to get a good, strong foothold in this market. He further states that from what he can learn everything in the building line in New Jersey is very quiet, more so than it has been in some time.

Plans have been filed for an eight-story brick building to be erected on the east side of Riverside Drive, whole front between 110th and 111th Streets. The building will cost $1,000,000.00. The Hendrik Hudson Co. is the owner. Rouse & Sloane, of 11 East Forty-third Street, are the architects.

Plans have been filed for an eleven-story commercial building with ground floor stores to be erected at 20 West Twenty-first Street for the Twenty-first Street Construction Co., of which former Superintendent of Buildings, James G. Wallace is president. It is to be fifty feet front and eighty-two feet deep and is to cost $205,000.00.

White House Tar and Cement Roofs Must Be Repaired.

Work on repairs costing $35,000.00 to be made in the White House, before President Roosevelt returns to Washington, have already begun. The house is closed to visitors and will remain so until the workmen depart. Among other items of repair is one of $5,000.00 for new roofs to the east and west wings of the mansion. These wings were built under the direction of McKim, Mead & White, of New York, who spent more than $5,000.00 on the work. The roofs have been leaking for many months, the composition of tar and cement having failed to endure the elements.

Special Meeting of the Stockholders of the Allis-Chalmers Company.

At the special meeting of the stockholders of the Allis-Chalmers Co., held in New Jersey Monday, July 16, it was voted to authorize an issue of bonds to the amount of $15,000,000.00, of which $12,000,000.00 are to be offered at 80 per cent for subscription by the preferred and common stockholders of the company, the remaining $3,000,000.00 to be reserved for the present in the treasury of the company. The stockholders also approved a conditional contract between the company and Shearson, Hammill & Co., acting in behalf of a syndicate to acquire such bonds as may not be subscribed for by the company's stockholders.

Will Spend the Summer in Europe.

W. N. Durbin, of Anderson, Ind., president of the American Sand-Lime Brick Co., and secretary of the Anderson Foundry and Machine Works, sailed with his wife and son to Europe on July 19. They will spend the balance of the summer in Paris. Ex-Governor W. T. Durbin, president of the Anderson Foundry and Machine Works, of Anderson, Ind., is also in Paris.

Sending Their Mills in, Out and All Over the Country.

The Kent Mill Co., of 170 Broadway, were obliged to move their offices from the eighth to the thirteenth floor, their business the past year being such that they need double the office space. Aside from their home business, their export business has grown considerable. They have just received an order for nine mills, to be delivered at once for export. In addition to these Swift & Co., have bought two mills for their fertilizer plant, while the Schenectady Brick Co. have installed a Kent mill to grind sand for brick. They have also shipped two Kent mills to the American Carbolite Co., for this plant at West Duluth for grinding limestone and coke. The International Paper Co. have also purchased one of their mills to be used for grinding coal.

Mr. Kimble will start on the 21st for the Fertilizer Manufacturers' Thirteenth Annual Convention at Put-in-Bay on July 24, 25 and 26. He expects to be gone a week and will make his headquarters while there at the famous Hotel Victory.

Erie R. R. to Build Main Line to Cleveland.

J. H. Maddy, assistant to President Underwood, says the Erie railroad is preparing to run its main line through Cleveland by building spurs from Meadville, Pa., to Cleveland and from Cleveland to Sterling. The outlay will be about $10,000,000.00.

Have a Whole Floor to Themselves Now.

Arthur N. Pierson & Co., of 1 Park Row, the Eastern agents of the Miracle Pressed Stone Co., report business as very satisfactory. They have now secured all the office space on the sixth floor of their building, on account of increasing business and to afford them space to display their various kinds of cement machinery and also to give demonstrations of how they work and what they can do. They are also getting out a new catalogue of their machinery which they expect to have ready about August 1.

Mr. A. N. Pierson is making a ten-day tour of the New England States in an automobile with a party of friends. He is expected back at his office on the 23rd.

Brick Easing Off—Cement Remaining Firm.

The John P. Kane Co. report business as excellent for this time of the year. The demand for their Trowell cement far exceeds the supply, but they say it is not to be wondered at, as all cement people are busy. Building conditions are about the same as a month ago; there is not so much speculative building going on, but there is considerable big work coming out to take the place of that that is now being finished up. Brick is about the only material that has eased off in price. That is because the demand has fallen off, which was looked for during July and August. If business continues good for the balance of the year, we may see a slight advance in cement.

Fine Opportunity for American Portland Cement.

Consul General George E. Anderson writes from Rio Janeiro that the inquiries from the United States and from American agents in South America as to the possibilities of the Portland cement trade in Brazil could hardly be made at a time which offers a better opportunity to enter the Brazilian market.

SYRACUSE, N. Y.

SYRACUSE, N. Y., July 18.—"There has been this summer," said Harvey E. Dingley, President of the National Wall Plaster Co., "an unprecedented boom in the building industry all over the country. We have all we can do to supply demand for wall plaster, and on traveling about I find that all building supply industries are prosperous. I see no reason why this condition should not continue."

The Thomas Millen Co., which owns quarries at Jamesville, have large kilns at Fiddler's Green in which they burn lime rock. The product is shipped to the cement factory at Wayland.

The Empire Portland Cement Co., at Warners, is doing the largest business this season of any in its history. They are shipping cement as fast as they can get cars. The price of cement in this vicinity in car load lots is $1.60 a barrel.

The old Adamant Plaster Co. will retire from business October 1. They have sold their plant to the Sherwood Metal Working Co., which will manufacture metal window screens and other articles invented by William E. Sherwood. The plant was sold for $30,000.00. The company recently sold its gypsum quarries for about $20,000.00. The men most interested in the Adamant Co. are back of the Sherwood Co. The Adamant Co. at one time was a large industry, owning beside the Syracuse plant a plant at Hastings-on-the-Hudson and property in Massachusetts. Under its first management it ran steadily into debt and its failure was one of the causes of the failure of the American Exchange National Bank. It was bought in by Levi S. Chapman, James E. Newell and Charles D. Blanchard.

At the annual meeting of the Onondaga Pottery Co. the following officers were elected: President, E. B. Judson; vice-president, James Pass; secretary, C. D. Avery; treasurer, G. N. Williams.

P. R. Quinlan, of the Warner-Quinlan Asphalt Co., denies a report sent out from New York that an attempt was being made to raise the price of asphalt. Mr. Quinlan says there has been no advance and there is no likelihood of any. He said that the report was started by the trust and that it is not worrying anybody.

The Onondaga Pipe Line Co. is sinking a salt well on the Onodaga salt reservation to supply the yards near Liverpool. This is the first salt well that has been sunk on this reservation for the last twenty-five years. Syracuse was originally built up by the salt industry, but it has been on the decline of recent years.

William B. Boyd, formerly one of the most prosperous salt manufacturers in Syracuse, died recently at his home in Solvay at the age of 83 years. Since 1875, Mr. Boyd had been a trustee of the Onondaga Coarse Salt Association and presided at the last meeting of the board of trustees. He had been engaged nearly fifty years in the manufacture of Solar salt. He was born in Yates county in 1824, in 1858 he acquired an interest in the Solar salt business and at the time of his death operated the Boyd Solar Salt Works in the town of Geddes.

Mill No. 6 of the International Pulp Co., at Gouverneur, the largest talc mill in the world, burned to the ground at Gouverneur, July 4. The talc was mined at Talcville on the Gouverneur and Edwards railroad where it was shipped to the mill and ground. This mill is the third one to burn in that section during the past seven months. The fire was caused by friction created by the machinery.

Joseph M. Hill, No. 123 Kirk Building, is doing a large business in cement granolite sidewalks and asbetholith.

CHICAGO, ILL.

CHICAGO, ILL., July 19.—Wherever one goes among the various constructing industries he finds large numbers of men busily engaged. Even though it is midsummer the weather continues fine and is admirable for concrete work of all kinds.

The large number of buildings now going up in the central district of the city are being pushed to completion with a rapidity that is amazing. The only drawback that has yet occurred since the opening of the season was experienced last week among the cement men. The striking members of the Cement Construction, Floor and Sidewalk Layers' Union returned to work on July 18, all but two of the 146 contractors in the city having given an increase of 5 cents an hour, and all other points for which the strike was called. At the present time all the contractors except two have resumed work and they are now carrying on their work as best they can with non-union labor.

The union claims a complete victory and secretary Powell of the Contractors' Association gave an interview admitting defeat. He said the employers were forced to surrender because of the large financial obligations involved.

The cement business of this city has gone forward with leaps and bounds during the past two or three years as to astonish all men engaged in the business and an immense amount of capital is invested in this branch alone.

The crushed stone business is still engaging the attention of a large number of men, some of whom have gone into it for the first time this season. Some dealers in crushed stone are apprehensive that the business is likely to be overdone, but the present demand for this material is still large and more likely to increase than diminish. A larger amount of crushed stone machinery has been sold in this city during the present season than ever before in the same length of time. And the demand for such machinery is still large.

The demand comes from all over the western states where growing towns and cities are prosperous and are engaged in making great public improvements in the roadways.

Dolese & Shepard Co., 184 LaSalle St., is one of the largest dealers in the city in crushed stone, and they have had so many large orders to fill that their crushing plants have been kept busy since the opening of the season.

The Chicago Crushed Stone Co., located at 108 LaSalle St., are engaged largely in the crushed stone business and say that their orders this season for crushed stone have been something unprecedented. They say that so long as the times are as prosperous as at the present and that so many roadways to be improved the demand for crushed stone is likely to continue. The demand so far this season has been greater than some of the crushed stone men have been able to supply promptly.

The American Crushed Stone Co., office at 92 LaSalle St., and yards at 2 East Webster Ave., say they have had an unusual demand for crushed stone this season. Like all other firms engaged in this line the firm reports the demand larger than ever experienced before in their history, and their orders have pushed them hard since the opening of the season to meet all demands.

The lime industry is still in a flourishing condition. A great majority of the kilns are still busy so that the supply is abundant and the price wavering around about 80 cents per barrel.

The Stearns Lime and Stone Co., 165 Randolph St., say that business with them is fairly good and they give the above quotation as the one generally prevailing, but admit that lime is sold at a lower price.

The Wisconsin Lime Co. express themselves as satisfied with the present condition of the market. They say that business is quite satisfactory to them, and that Wisconsin lime has fully established itself in this market as a first class article.

The making of brick goes on with tremendous strides in this city and vicinity. The various brick companies here including the Illinois Brick Co., with its large number of yards, the Continental and some half dozen others report the making of brick still going on on a large scale. The demand is reported to be constant and very large and the price of brick is reported firm at $5.00 per thousand.

All the sand and gravel companies report their business as still exceedingly active and the demand large. The Chicago Gravel Co., 1400 Fisher Bldg., say that with their recent enlargement of their plant at Hammond, Ind. they are pressed to meet all demands made upon them for gravel

which is used so extensively in the ballasting of railroads, with which they have large contracts. The season with them has been an active one from the beginning and they find it difficult to meet all demands made upon them from various sources.

The American Sand and Gravel Co., 907 Chamber of Commerce also report a large and steady demand for both sand and gravel used for ballasting railroads and building purposes.

The Lake Shore Sand and Gravel Co. say that business continues remarkably good and that the demands made upon them are nearly up to their ability to meet.

The Richardson Sand Co., having an office in the Chamber of Commerce, also report that their firm is kept busy supplying the demands made upon them.

Jacob Schnieder, of Schnieder Bros. of Defiance, Ohio, was in the city last week buying machinery, including additional crushing plant equipment and another Smith concrete mixer. Mr. Schnieder reports plenty of business. He has a large concrete job, building three large locks for the Ohio canal.

Mr. Bailey, of the Marion Stone Co., Marion, Ind., was in the city recently to buy more machinery for their quarry and concreting business. His crushing plant is running night and day and it is hard to keep up with the orders. Mr. Bailey also has large contracts for concrete work. This firm has grown rapidly.

W. J. Sparks, of Mt. Vernon, Ky., was in the city to-day to purchase a Smith concrete mixer and some other machinery. He has three large crushing plants in full operation and also several big concrete jobs. He is working about 400 men.

Jos. Robinson, concrete contractor of Kalamazoo, Mich., spent a couple of days here recently looking over methods of handling concrete in large building work in Chicago. He has several large contracts in Kalamazoo.

The Contractors' Supply and Equipment Co. reports through Mr. George C. Marsh, its president, that business with them still continues on a large and active scale. The demand for Smith mixers and machinery for making concrete, etc., still continues steady from various towns and cities in the west where new industries are being constantly developed. Mr. Marsh says that business the past season has been fully up to his expectations and, indeed, has largely exceeded his calculations. This firm is in a prosperous condition and prospects ahead were never better than at this time.

NASHVILLE AND THE SOUTHEAST.

NASHVILLE, TENN., July 21.—The concrete block plant of the T. J. Mason Co., near Van Blarcom Station, this city, has been completed and the machinery is being installed.

The Fulcher & Bardon Stone Co. have opened a new establishment here for the doing of monumental and building work. They are located in the eastern part of town.

Concrete blocks will be manufactured in Waverly, Tenn., at a early date. Messrs. W. T. McCracken and Slayden Bros. have already purchased machinery for that purpose and will begin work within a few days.

The Birmingham (Ala.) Contracting and Paving Co. has filed articles of incorporation with a capital stock of $6,000.00. Eugene Fies, John Donelson and R. Fies are the incorporators.

Over at Chattanooga the Thermoga Clay Products Co., has been organized and proposes to develop the clay deposits of this district and the incorporators are: O. E. Deppen, C. A. Daulwalter, E. Gill, J. P. Chambers and G. J. Hamilton.

Several cement block houses are being erected in Birmingham, Ala., by W. G. Oliver, president of the Cement Block Manufacturing Co. The company also has the contract for the manufacture of blocks and the erection of the new cement block fire station which the city is soon to build in Norwood. The Cement Block Manufacturing Co. was organized a little over a year ago and now has a well equipped plant in operation, turning out 800 blocks a day. The plant is equipped with a crushing machine which prepares the slag used in the manufacture and is also fitted with a system of pipes which thoroughly moisten the stones during the process of seasoning. Slabs of all sizes, arches, columns and banister blocks are made according to specifications. Frank A. Evans, an expert cement man, who was brought to Birmingham from Detroit to take charge of the plant is superintendent, and the officers of the company are: W. G. Oliver, president; J. H. Hillman, vice president; W. A. Watts, secretary and treasurer.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., July 20.—The summer building activity is moving forward with unabated force. The subdivisions, the public buildings and private enterprises are consuming large quantities of material and occupying the attention of hundreds of contractors and laborers.

This is the day of big things in New South Memphis. The New South Memphis Warehouse Co., that sometime ago purchased 124 acres of land for $1,000,000.00, will construct granolithic sidewalks from the property to Kerr Ave., a distance of about one and a quarter miles. By working day and night the Selden-Breck Construction Co., of this city, and St. Louis will be able to complete two compresses and forty warehouses by October 1. The company will use some 350 cars of cement in the building of the warehouses.

MISSOURI.

Henry Lehman, of Boston, Mo., in Barton County, is preparing to open a tile factory on his farm six miles west of Boston, where he has both good clay and coal.

The Kansas City Portland Cement Co. is building a plant at Sugar Creek with a capacity of 1,500 barrels of Portland cement daily. According to the statement of the officials of the company a large part of the output of the plant will be shipped to points on the Missouri river from St. Joseph to St. Louis, by a private barge line to be maintained by the company. The plant will cost more than $600,000.00 and will be equipped with latest improved machinery.

Speaking of he demand for cement, an authority in this State said the other day: "If our cement plant was running and producing 1,500 barrels of cement a day a market could be found for the whole of it without going outside of Kansas City. Although our plant is in the early stages of construction, San Francisco has heard that Kansas City has a cement plant. The mills already in operation can not supply San Francisco rapidly enough. I believe cement will gradually replace lumber in all buildings. One reason is the scarcity and the resulting high prices of lumber, and the other is because of the lasting qualities of concrete construction work."

THE TERRITORIES.

The White-Bone Cement Plaster Co., of Weatherford, O. T., has been incorporated with $25,000.00 capital stock. The incorporators are: J. P. White, J. S. Bryan and A. D. Nikel, of Weatherford; T. J. Dozier, of Indianapolis, Ind., and J. T. Thurman, of Kansas City, Mo

The Waurika Brick and Tile Co., of Waurika, O. T., has been incorporated with a capital stock of $10,000.00. The incorporators are: Parsons and Robinson, Wooten Bros., P. H. Milam, J. M. Dunn, Ben Baxter, R. E. Hall, M. P. Smith, G M. Harris, J. N. Johnson & Co., D. W. Cummins and R. L. Gibson.

KANSAS.

The Chanute Cement and Clay Products Co. will construct a $2,500,000.00 Portland cement plant, at that city. It will have a capacity of 8,000 barrels a day.

At Independence, Kas., a meeting of the directors of the Western States Portland Cement Co. has just taken place. The following were present: W. F. Cowham, of Jackson, Mich., president; C. E. Andrews, of Boonville, Mo., vice president; John W. Shove, of Jackson, Mich. secretary; A. Stienmetz, Independence Kas., assistant secretary; A. C. Stitch, Independence, Kas., treasurer, and B. F. Henry, Olathe; S. Potter, of Jackson, Mich.; Thomas Page, of Topeka, Kas., and Thos. Page, of Topeka, Kas., and Thomas H. Dinsmore, of New York City. It is announced with reference to the meeting that a dividend of 14 per cent on the one and a half million capital investment was declared, payable July 15 and September 15. This means the disbursement of $20 000.00, paying up all the back interest which has accumulated during the building of the plant to July 1, 1906.

At Kansas City a corporation known as the Guthrie Mountain Coal and Cement Co. has been organzed with a capital of $1.00 000 00 for the purpose of building a Portland cement plant, a vitrified brick plant and opening coal mines at Mapleton, 18 miles northwest of Fort Scott.

Sam T. McDermott, of Kansas City, is president of the new company; Elwood C. Hepler, of Fort Scott, is vice president and general manager, and Eugene E. Edwards, of Chicago, is the secretary and treasurer. The stock of the company is divided into one million shares of the par value of $1.00 each.

Dr. H. V. Dresbach, who is president of the Endurite Co., which will build a plant at Iola, Kas., has made arrangements with the municipal governments of Kansas City to make a test of endurite as a paving on their principal streets. The endurite is said to make an indestructible paving and will be used if proven so.

The new works of the Iola Portland Cement Co., in Bassett, are now in full operation. The last kiln, the special patent kiln of Dr. Gerlach, has been started and the entire new addition is grinding out cement. Altogether the Iola Portland Co. is now employing between 600 and 700 men.

The Hiawatha Composite Pressed Brick Co. now has its plant at Hiawatha in running order and is turning out large quantities of fine pressed brick. The brick can be made any color, but most of them are of a white tint. The first order of 5,000 brick was delivered late last month.

LOUISVILLE, KY.

LOUISVILLE, KY., July 21.—There is no likelihood, from present indications, that there will be any material falling off in concrete construction work in this locality during the present season. It is true that a number of projects considered earlier in the season, have been postponed at least temporarily, still the volume of business is large enough to give all the operators as much as they can take care of conveniently. The greatest trouble in this section of the country at the present time, is that of securing sufficient labor, which is due to the fact that so many building operations are under way. This year operators in all lines have been compelled to increase the wages of all kinds of labor, and even with this additional incentive, it seems a difficult matter to obtain as many men as could be used to advantage.

The complaint is quite general, causing considerable inconvenience that often delays operations that would otherwise go forward much more rapidly, thereby making it impossible to take care of a large number of orders. The prices of various building materials continue higher than have been known for some time, and this is having its effect on operations also. All the large concrete jobs undertaken early in the season are progressing nicely, although the continued rains during the last month have been detrimental to outdoor work. Concrete is growing in favor in this city and the number of large jobs continue to grow as the people become better educated as to its many advantages.

The Falls City Artificial Stone Co. and the Concrete Building Block Co. have moved their offices from 708 E. Main Street to Fifth and Main Streets, where they will be located temporarily, preparatory to making some changes in the organization which will be announced later. They are busy on concrete work of various kinds and have a number of large orders in various parts of the city.

The National Concrete Construction Co. say they are busy both in and out of the office. They have just been awarded the contract for the concrete floors of the Lincoln Savings Bank Building, at Fourth and Market Streets. This will be a fifteen-story structure. They have just completed the foundation work, the contract for which they received some months ago. They also have the contract for the concrete on the new Louisville Lighting Co.'s sub station on Third Street. They have a number of other nice orders and report that the conditions with them continue most favorable.

The Fitch-Troxell Co., 108 Third Street, have a number of crews at work in various parts of the city on concrete work; also one crew at New Albany, Ind. Business, they say, has never been more satisfactory and they have in view a number of changes which will give them additional scope for action.

The Central Concrete Construction Co. are busy turning out concrete blocks and cement bricks at their large modernly equipped plant in the eastern part of the city. The number of the orders is in every way satisfactory, and they are well pleased with the progress made since their organization.

The National Roofing and Supply Co. say that business with them, both in concrete and roofing lines, is good. They have as many orders as they can take care of conveniently and keep a number of crews busy working full time.

The Southern Roofing and Paving Co. have as much as they can possibly do at concrete work and roofing. Mr. C. A. Monks, of this concern, has just been elected president of the National Master Composition Roofers' Association at its convention held several days ago at Buffalo, N. Y. Mr. Monks has not yet returned to his office, having taken this occasion to visit the dealers in the various cities of the East.

The Louisville Roofing and Supply Co., 1127 West Main Street, is one of the newest organizations in the roofing business in the city. They begun business about two months ago. The incorporators are all Louisville men and the company has a paid up capital stock of $5,000.00. They report business thus far as being entirely satisfactory and that the future outlook is promising.

Samuel F. Troxell & Co., one of the pioneer roofing concerns of the city, have just received several large contracts for roofing, which will keep a large number of hands employed. They say the outlook for roofing in this section has improved of late, and they expect to be busy during the remainder of the season.

The Kentucky Wall Plaster Co. report that they are fairly busy, particularly on local contracts although the out of town orders have diminished somewhat during the past few weeks. This they attribute to labor troubles causing the falling off in building operations. They are operating their local plant as well as their Jeffersonville, Ind., plant at the present time.

The Kentucky Vitrified Brick Co. say that business with them is fair, although they are not particularly rushed with orders at the present time. They have been making some improvements at the plant lately, which are about completed now, and they will in the near future be manufacturing fire proofing in addition to vitrified brick.

The P. Bannon Sewer Pipe Works, through Mr. M. J. Bannon, says that business is fairly good, although the labor troubles are making themselves felt in every line. They have found it necessary to increase the wages of all their help, although the price of sewer pipe has not advanced during the last two years. This seems a little out of reason, and to a certain extent makes it more difficult for them to operate and obtain a living profit for their output.

J. B. Speed & Co., through Mr. Gray, report that business with them is quite satisfactory, particularly the demand for their Portland cement. They have been compelled to increase the price of this commodity, owing to the extra large demand which they are unable to supply with their present limited capacity. The demand for lime is good, while the call for natural cement has fallen off some in the last few weeks.

Mr. Courtney, secretary of the Western Cement Co., says that the demand for Louisville cement is not so brisk as has been, although they are doing a nice business.

The Utica Lime Co. are enjoying a nice demand for lime and both Portland and natural cement. Their business has held up remarkably well during the present year, and prospects are favorable for the future. Mr. John L. Wheat, of this company, is in the East enjoying a vacation.

Looking in on the crushed stone interests of Ohio the other day I had the pleasure of meeting nine feet of Burgess of the Ingersoll-Rand, and while the writer was under the weather, yet when you get within a mile or two of Burgess you are bound to recover. He introduced me to everybody from everywhere in and around Cleveland. My first talk was with E. F. Fancher, of the Medina Quarry Co., of Medina, N. Y. This company recently installed an Ingersoll-Rand compressor and 150 h. p. boiler. They have put in also a new bunch of drills for the Orleans Co. quarry. This company is doing a large business in flagging for street work.

Speaking of the trade, he said the demand for paving is in excess of the supply. New York is using to-day a larger quantity than ever. Some 300,000 yards are gotten out from this company's quarries every year. The Medina Co. have taken orders for 100 miles of street recently, and another order for 50,000 yards to go to Buffalo. "The only objection," said Mr. Fancher, "to this business is that street paving with its bi-products isn't a profitable business. If business in building material and curbing work was large enough to cope with the demand for paving, it would make a very profitable business."

THE CRESCENT CITY.

NEW ORLEANS, LA., July 18.—One day during this week a writer in the *Daily Picayune* remarked that building in New Orleans has assumed such proportions that nobody is any longer surprised to see old buildings getting out of the way and new ones taking their places. Once the old building was considered with a sort of sacred awe, but now the city has reached a point where even good buildings have to get out of the way for better ones.

The increase in building over the same period last year is for the year ending June 1, the building this year was 42 per cent greater than last year. In dollars the excess was $2,741,798.00.

The following report of the Mechanics, Dealers and Lumbermen's Exchange from August 1, 1905, to July 15, 1906, shows an interesting increase as follows:

	1904-05.	1905-06.
Bricks, building, M.....	25,576,800	27,776,000
Bricks, fire, M.....	670,840	243,200
Lumber, feet M.....	119,941,187	124,084,600
Shingles, M.	7,110,000	13,569,000
Laths, M.	8,888,000	10,491,000
Sand, barrels	203,342	1,270,550
Lime, barrels	944,905	1,140,036
Cement, barrels	142,490	141,647
Shells, barrels	369,350	718,525
Slate, squares	1,625	4,030

Among the buildings that have gone up and are going up are the concrete buildings, reinforced concrete and the hollow cement blocks. Reinforced concrete is being used more extensively than any other form of concrete or cement, and it, in itself, will go away up into the millions of dollars. It was this that was used and is being used in the wharves and docks of the Illinois Central Railroad Co., and the New Orleans Terminal Co., for its ship slips and retaining walls and its elevators. Then there are large business buildings that have been put of reinforced concrete and foundations, and retaining walls not a few.

The concrete block is a little slower getting a foot hold. The architects do not like it because it simulates something that it is not. If it could be turned out in a manner that is entirely original and not like blocks of stone, it would gain more speedy favor. But for all that it is being used for building houses and walls to some considerable extent.

Three factories have been established during the past year and possibly more, but three are in active work. The largest company is the Hollow Concrete Block Manufacturing Co., with an office at 825 Union Street, and factory on Broad and Toulouse Streets. The officers are: Albert Godchaux, president; Luigi Dell'Orto, vice president; Arturo Dell'Orto, treasurer; A. A. Zodiag, secretary and manager. This company is building a house on Camp Street that looks all right so far, and it is believed that it will make a neat and comfortable dwelling. It is claimed that it is as cheap as lumber and needs no painting; that it is 30 per cent cheaper than common brick and 60 per cent cheaper than pressed brick or stone. The capacity of this factory is 1,000 blocks a day, but is not running full time now. The Pettyjohn system is used and the McKelvey mixer.

The National Cement, Stone and Brick Co., L. P. Bryant, president, is in the Hennen building, and the company is turning out some good material out on Bayou St. John. This company has the proprietors were in the city when the repre wish to get a good stock on hand before offering any of their product for sale.

Warner & Black have a factory at 2610 Bayou Street, that is turning out good work. Neither of the proprietrs were in the city when the representative of ROCK PRODUCTS called.

F. Codman Ford, 304 and 306 Baronne Street, speaking of building blocks, shows a picture of a house built of hollow terra cotta building blocks manufactured by the Pioneer Fireproof Co., which are made of fire clay. They are lighter and cheaper than brick. The weight is 40 pounds to the cubic foot against 125 pounds of brick. Mr. Ford is recommending these to those who are building cheap, light buildings.

You have heard the old saying, "Get on to his curves." In other words, keep your eye on the competitor who is a leader of thought and don't be satisfied to be always trailing. Try your hand at leading awhile, and while competition will be strong the price will go up and the influence of two leaders of thought will mean an increased use of new materials.

Editorial Rambles.

The Needs of the Trade.

The weakness of the building material trade is that they are throwing stones at their own brothers-in-law, the man who gets out building stone or the operator in lime or the plaster man. Why not fire your ammunition to good advantage by trying to get the business of the brick man or the lumberman? If this is the stone age, and you know it is, there is nothing in a building that can not be erected with the materials quarried and manufactured by the readers of ROCK PRODUCTS. That being the case, why not a little team work? If the lime and metal lath man and the operator in building stone work in harmony with the other building material interests they will all be benefited. You hear about inside work in a well balanced team of baseball players. Inside work in the builders' material trades will mean a greater use of building stone, crushed stone and the products manufactured from this material. Let us get together. Let us pull, not apart, but together. Instead of being childish about what the building stone man does, get together with him. There is plenty of trade for all if systematic effort is put forth.

We represent the live men in the business and ROCK PRODUCTS is here with more strength than any number of papers because of its large clientele from sea to sea and from pole to pole, and our excuse for running a trade paper is to help the people it represents.

This is one of our suggestions. Are you with us, or are you too narrow across the chest to see into the future and recognize the possibilities of team work for the benefit of the stone and material business of the world?

If you have anything to do, do it. If your material is all right advertise it and you will sell it. If the product of your lime kiln is not as good as your neighbor's and you know your raw material is the same there is something the matter. Gather up the lines and find out what it is and then do something.

If you find an engineer connected with a railroad that don't know his business and it looks like his pull comes from the president, get next to him and educate him, not with a silver dollar, but take him up to your mill and show him how you make cement. Demonstrate to him that that is your business and that you know how to manipulate the various materials that go to make a high grade cement. If he has any sense then he will get off his perch and he will buy your cement. It will make it easier for him to recommend concrete for the various improvements on maintenance of way or buildings along the steel rails.

An automobile trip of five hours recently convinced the writer that the brick man was very much alive, for 500 new apartment buildings were under course of construction in the city of New York and brick was the largest factor.

The building stone man and the concrete man each should get business. This is a fine time. Brick is scarce and high. Sand-lime brick is getting a hold and, for that matter, concrete also, but systematic pushing by the various branches of this industry will mean a greater use of the product of the rock. That is what we are all here for.

ROCK PRODUCTS is the educator of the building material man everywhere as to the possibilities of his business, and where to get the products of the rock. Step over into the band wagon.

It is a strange thing, but it is a fact, there is more liability for leaks in the office than in the warehouse. We believe we can prove this to the builders' supply man, unless he has a close check-up system on orders and the handling of same.

There is no place in a growing industry for autocrats. The desire to take care of your customer and insisting on your employees carrying out your policy will mean increased profits.

Cash discounts are all right if you get them from both ends, but if you must allow them and your bank will not permit you to take advantage of them your interest account grows.

Supt. Bienhauer, of the Lincoln Iron Works, Rutland, Vt., was a Western visitor. They have installed machines in a number of quarries and incidentally added new orders to their list.

The big quarres of E. H. French of North Baltimore, Ohio, are working full time. They have five years' contract for ballast for the B. and O.

The Harmon S. Palmer Hollow Concrete Building Block Co., 1450 Girard Street, Washington, D. C., have issued a unique booklet entitled, "A Good Idea." It looks like a catechism and indeed the catechism style is what you will find inside. The questions and the answers develop a great deal of information with regard to hollow concrete building blocks, and incidentally the purposes and progress of the company's business as the originators of the great concrete stone industry so interesting to the large number of our readers.

The efficiency and popularity of the Allis-Chalmers crushers and cement grinding machinery has once more been demonstrated by the receipt of Dr. Irving W. Bachman, acting for the Santa Cruz Portland Cement Co., Santa Cruz, Cal., and

CUT OF THE FREAKS OF THE EARTHQUAKE IN SAN FRANCISCO—ASPHALT PAVEMENT TORN UP.

for the Atlantic Portland Cement Co., Nazareth, Pa., for the largest single order for cement machinery equipment ever placed by one man at one time in the history of the industry in this country. The order for the Santa Cruz Portland Cement Co. included a No. 9 crusher, two No. 6 crushers, sixteen No. 8 Gates' ball mills, and twenty-two 5½ x 22 feet Gates' tube mills. The Atlantic Portland Cement Co.'s order consisted of a No. 9 crusher, four No. 6 crushers, twenty-two No. 8 Gates' ball mills and twenty-six 5½ x 22 feet Gates' tube mills.

F. W. Farrington, manager of the United States Gypsum Co., Minneapolis, in speaking of the business condition in the Northwest, said: "Trade is good and prospects are very favorable for the business." The U. S. G. with their many brands, with mills within easy reach, have wonderful trade in the Northwest. Manager Farrington is the kind of a man to get. He is thoroughly familiar with the lumber trade, having been formerly connected with that business, and he says he likes to see ROCK PRODUCTS come to his desk.

One of the most attractively illustrated catalogues of recent issue is that being sent out by the Hayden Automatic Block Machine Co., of Columbus, Ohio. It is generously illustrated with the various products of this concern and contains a large number of new styles of concrete blocks, balls, posts, etc. The cover design is very attractive and all together it makes a handsome addition to their large line of literature.

The man who can surround himself with men of energy and brains has his success assured.

A Problem to Solve.

The real extent of the magnitude of the earthquake at San Francisco can best be appreciated by the view presented herewith showing a great fissure in the street. This thoroughfare was paved with asphalt, and the damage done is almost irreparable. Some if the fissures were fifteen feet in width; others, while not so great in width are bottomless. This entails a problem of the most serious nature, over which human ingenuity seemingly can be of little assistance. How to bridge over these bottomless chasms is worthy the most adroit engineering feat by experts.

At first thought the problem seems a simple affair, but as the real magnitude of the damage comes to us, we can appreciate the import of the undertaking. Bridging over or filling in an ordinary chasm is one accomplished with comparative ease, but where there is no bottom and the sides are naturally treacherous, the feat becomes one beyond the powers of ordinary human skill.

Engineer Van Alstyne, of New York State, is busy opening the bids for the construction of upward of 175 miles of good roads throughout the State. This represents but a small part of the road work that is projected, but it is interesting as the culmination of the long period of agitation in favor of good road building. There are about 75,000 miles of roads in the State of New York, which have been mostly imperfectly kept in repair by the old system of letting the farmers work out their taxes by mending the road without giving any attention to whether they knew anything about road making or not. The State of New York has appropriated $25,000,000.00 and will advance another $25,000,000.00 in order to push the immense improvements as fast as possible.

The Williams Patent Crusher and Pulverizer Co., Old Colony Building, Chicago, Ill., have just issued their new cement catalogue which thoroughly illustrates and describes the new Williams limestone and gypsum grinders, which can not fail to be of interest to all the manufacturers of cement and plaster, and will be sent upon application. The catalogue, besides exploiting all the phases of the machine, contains a large number of testimonial letters, classified so as to show the requirements of the machine in each case. It tells a very interesting and convincing story and should be given a place in your archives and have your attention.

The Miracle Pressed Stone Co., Minneapolis, Minn., whose line of cement building material machinery and concrete working tools are so well known, now come to the front with "Miracle colors" for cement products. The yellow, reds, and black are all guaranteed under certain specifications, and this may not be the last item that the Miracles have to introduce. They have certainly made a deep study of the requirements of the concrete contractor and have contributed no little to the present advancement of the industry.

The National Cement Stone Co., York, Pa., manufacturers and contractors in cement building materials, have issued an attractive catalogue showing by reproduced photographs the quality of the work that they do. In fact, quality is the subject of the booklet and it might be well for other contractors to follow their example in letting the trade know that quality in concrete building commodities is the essential feature.

The Jeffrey Manufacturing Co., Columbus, Ohio, who build the Jeffrey swing hammer pulverizer announce that they will gladly make crushing tests for interested parties free of charge, and in this way show every customer before he purchases the machine just what kind of work can be turned out with his own special kind of material. Crushing and fine grinding is not the only field in which this concern excels. Their elevating, conveying, drilling, screening and mining machinery are already well known to many of the readers of this paper.

The Wausau, New York, quarries are doing a large business. They recently added a new Ingersoll-Rand channeler.

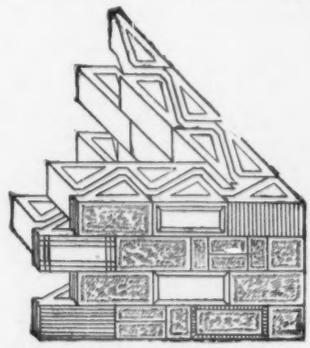
Scioto Stone Co., of Columbus, Ohio, recently added an Allis Chalmers crusher and large air compressor.

Guaranteed Dry Concrete Walls.

The Pegram improved concrete building block is produced by dividing the single piece block diagonally across corners as well as the core openings. This makes what is known as a two-piece wall with hollows in the blocks which lay up a triple hollow wall and produces a right angle triangle block. A block of this shape has proven a splendid system for a two-piece wall as it insures a perfectly dry inside wall which enables plastering direct over the wall. A wall laid up of right angle triangle blocks gives a continuous air space running horizontally throughout the wall, there being no contact between the inner and outer wall. By making the outside block from a better mixture of material than the inside block will produce a block of better appearance than the inside block, when produced from gravel and the coarser material, although the inside block will be equal in strength and a great deal cheaper.

The strength and ventilation is greater in the right angle triangle block than any other two-piece block on the market. The block itself will appeal to your judgment as to strength and the three separate air passages in the wall is the best ventilated wall attainable, it not being necessary for furring and lathing for plastering. A guarantee is given with each machine to cover wall ventilation which enables all makers of the Pegram right angle triangle blocks to guarantee obsolute dry walls to their customers which gives them the advantage over all other systems.

The "Reed" machines produce two blocks at the same operation, and when operated to full force, two men counting the material mixed and run into the hopper, 800 lineal feet of 9 in. to 14 in. wall is produced. When a different design is



PEGRAM SYSTEM OF BUILDING BLOCK.

desired you only need a face plate and not an entire machine. With the "Reed" stationary mould box the blocks are produced from a wetter mixture than can be used in the opening mould. You waste no time on the "Reed" taking out grains of sand, fastening up and unfastening the mould box or using a square each operation. The "Reed" machine produces both the Pegram right angle triangle and the single double hollow blocks. You will find the single double hollow block desirable for all work where the walls are not to be plastered over. The "Reed" produces blocks from 8 in. to 32 in. in length; 4 in. to 24 in. in width and height limited by fixtures used.

How many different sizes of single moulds would be required to produce the same variety of dimensions of blocks? Answer: Basis of adjustment 1/16 of an inch, 15,728,640 single moulds; basis of adjustment 1 inch 3,840 single moulds; basis of adjustment 2 inches (which is required in general work) 480 single moulds. Have you ever figured the advantage of owning an adjustable machine?

Experience has demonstrated that the economical and preferable method of caring for blocks is to take the blocks away from the machine and not the machine away from the blocks, thus decreasing the risk of ruining the blocks. Each block ruined is money lost. The "Reed" is so simple any one can operate it; so rapid that it only depends on the activity of the operator for speed; so durable it will last a life time.

We are prepared to manufacture any design of face plate and have a very large assortment to choose from.

We will be pleased to tell you more about the right angle triangle blocks and operations of the "Reed" machines. Address the Wichita Coal and Material Co., Wichita, Kansas.

Quarries.

The National Quarry Owners' Association.

Meets Semi-Annually.

D. McL. McKay, Chicago, Ill.....President
Chas. A. Pfeiffer, St. Joseph, Mo.....First Vice President
E. T. Fancher, Albion, N. Y.....Second Vice President
Sol. M. Wolf, Bellevue, Ohio.....Third Vice President
H. H. Defebaugh, Louisville, Ky.....Secretary-Treasurer

Official Organ, ROCK PRODUCTS.

One Method of Handling Crushed Stone.

CHICAGO, ILL., July 2.—The Milwaukee Monument Co. send us the following interesting communication: "In handling material from quarry, through the crusher onto cars, our way of doing it is to take the material from the quarry, which is lifted by means of a derrick, directly into the hopper. From our working tracks, we run cars onto a dump platform, and dump directly into the hopper. Cars are pulled onto the dump platform by friction noist. We have a trestle work forty-five feet high, on which these cars run. The crushed granite is spouted into the cars. These cars are then dumped from the trestle work, forming a pile 250 feet long. Below this pile, we have a nine foot tunnel, in the center of which tunnel we have a 36-inch conveying belt. The roof of our tunnel has spout holes, the granite is spouted onto the conveying belt. The belt carries the material into cars. We can load fifty cars a day, and it takes three men to do it. Formerly the granite was loaded into cars by means of dump carts and scrapers. We claim that we handle our crushed granite cheaper than any one else. We have recently installed a Laidlaw-Dunn-Gordon air compressor, and Kotten plug drillers at our quarries, one more A. H. & D. Co. derrick, and have added to our line of cottages. We are now working 160 men at our quarries, and are well supplied with orders. Our plant at Milwaukee is well supplied with orders, and we can use additional cutters."

To Operate a Ballast Plant.

TULSA, I. T., July 12.—A vein of fine limestone at Lost City, four miles west of this city, on the Enid branch of the Frisco, is to be developed, the Tulsa Limestone Ballast Co., incorporated for $25,000.00, having been organized for this purpose. A plant will be installed and in operation within a few weeks which will have a daily capacity of twenty-five cars. Recently, Lost City, which is a peculiar rock formation and a favorite picnic ground, was purchased by a company for the purpose of making of the place a public park and summer resort but the development of the limestone industry will not interfere with this in any way.

Installing Modern Crusher.

COFFEYVILLE, KAN., July 10.— L. H. Stevens, of this city has just completed the work of putting in a rock crushing plant on the Iron Mountain road, a couple of miles south of Seminole in the territory. The rock crushing machinery which Mr. Stevens has installed is the very best and the heaviest made. It is fitted with a heavy steam drill and all the modern improvements for rapid work. A blacksmith shop is to be put in at the crusher to do all the ordinary repair work. Mr. Stevens says he will employ about fifteen men regularly. He has an order from the Missouri Pacific Railroad Co. to be filled the latter part of this week.

Opening Old Quarry to Crush Stone.

WAYNESBURG, PA., July 19.—A stone crushing plant is being erected at the old brick plant of Joseph Ross on the pike east of town and will soon be crushing stone from the quarry at that point for the East Waynesburg paving contract. This will be a very convenient location both to the quarry and the streets. The quarry is one of the oldest about town, as it was opened before the civil war, we believe. For many years subsequently, however, it was idle until Mr. Ross erected his brick establishment on the site.

A Center of Big Operations.

FINDLAY, OHIO, July 19.—The stone companies in Findlay, having such an unlimited output as they have at the present, are lucky in securing large contracts. The largest of these is probably that of furnishing the ballasting for the several new trolley lines recently opened into this city. Probably the largest stone company doing business in Findlay to-day is the Tarbox & McCall Co., their fine plant being located in upper Western avenue, near the intersection of Lima avenue and Seventh street. This big plant is one of the most complete in this section of the country, it being equipped with all the necessary machinery for the quarrying and crushing of stone and the manufacture of cement blocks.

The quarries of this company are very large. With a large number of workmen and other facilities, the company is able to turn out stone on very short notice in car load lots. This concern had the contract for the furnishing of the ballasting stone for the Western Ohio railway between Findlay and Lima.

Another large concern is the Hancock Stone Co., controlled by Messrs. John Pogue, W. H. Loy and John Shafer and several others. Their fine plant which was recently completed, is located along the right of way of the Tangent line railroad and active operations will be commenced within a short time, as a large amount of land is under lease by the promoters of the company near the plant. The plant was erected at an expenditure of many thousands of dollars, and as soon as put in operation, will give employment to a large number of workmen. Other quarries are owned by Lemuel McManness, N. B. Wells & Son, Henry Herscher and others. These plants are all located on the east side.

Nearly all of these operations deal largely in crushed stone, supplying the output either for concrete work or ballast. This relieves them of considerable waste stone, at the same time nets them a nice profit.

Operate Ganister Quarries.

E. R. Baldridge & Co., of Hollidaysburg, Pa., have recently completed additions to their Barre ganister quarries by the erection of an incline plane and large tipple. The ganister from this point is used largely in the steel departments, and this firm is one of the largest in the country devoted to the quarrying of this material. They contemplate reopening their celebrated Point View quarries, where they have a very high grade of ganister rock for use in manufacturing silica brick.

Install More Equipment.

BELGIUM, WIS., July 6.—On June 20 the Lake Shore Stone Co. put into service another steamer (The Topeka), with a carrying capacity of 1,500 yards. The company has plenty of orders and expects to move about 200,000 yards of stone this season.

Enjoy Prosperous Business.

GOUVERNEUR, N. Y., July 16.—The Northern Crushed Stone Co., of this city, which is controlled by the same parties who own the Northern N. Y. Marble Co., has established a big business the past three years in crushed stone made out of the waste of the marble quarry. The plant employs from 30 to 35 men, principally Italians and Spaniards, and has a capacity of 400 tons of crushed stone daily. The product is used for concrete work, railroad ballast and for macadamizing

Purchase Big Crusher Plant.

WINNIPEG, MAN., July 9.—An important deal affecting the supply of building materials in the local market was closed recently whereby Dunn Bros. have secured exclusive sale of the extensive output of the crushed and rubble stone of the Modern Stone Co., who have one of the largest and most up-to-date stone plants in the West. The Modern Stone Co. was formed about two years ago, consisting of a number of prominent citizens, and they have spared no expense in establishing an industry of large proportions, their quarry being located at Stony Mountain, a source of supply for the city for over twenty-five years. The output of the plant under normal conditions is a trainload of stone daily, and contractors and others in the city will be able to secure any quantity of stone at any time required.

THE CRUSHING BUSINESS.

The Economies of Machinery and the Improvements Reducing the Cost.

INDUSTRY REALLY IN ITS INFANCY.

The crushed stone industry up to a very few years ago was considered a proposition solely useful to railroad companies in producing ballast for the construction and maintenance of the roadbed and nearly all of the first crushers that were put into operation were either fostered by or the direct investment of railroad companies. A very large fraction of the entire volume of crushed rock produced in this country to-day is still taken by this first great consumer of the product, but recently the concrete industry which has developed marvelously has created a new demand for crushed rock; and the screenings which were so long considered by the early crusher man as an expensive waste proposition, in this new industry becomes the most valuable part of the product. It is another case of the stone which the builder rejected becoming the chief thing in request.

The demand for crushed rock in the present season far surpasses anything that has ever occurred in the past and there is every indication that next year the call will be even greater than this for more great works in the shape of dams, canals, retaining walls, and entire warehouses, depots and buildings of large proportions in every part of the country are being made to include a greater amount of concrete work.

The manufacture of cement itself begins with a crusher proposition for all the rock that is transformed into cement in the process of manufacture must first be crushed and then ground to an impalpable powder. Every barrel of cement that is manufactured calls for at least twice that amount of crushed rock and screenings in spite of the fact that quite a fraction of the cement manufactured is employed in the making of commodities where little or no crushed rock is used the base of which is sand alone. By this gauge it will be seen that in the present year more than 80,000,000 barrels (about 10,000,000 yards) of crushed rock will be used in concrete construction alone against comparatively nothing a few years ago.

The macadam which is used for making street pavings and for the metal of country roads about which there has been so much agitation recently now comes from the crusher on contract as a business proposition, and not from the rock pile of penal servitude for minor offences, which was the custom a decade ago in many places. It is impossible to make a definite figure as to the amount of macadam roads that come from the crushers of the country this year as compared with that of former years, but we are within the bounds of reason when we state that the crusher man is supplying macadam stone in at least double the volume that he did in 1904. The popularity of the automobile has created a new interest in the country roads, to such an extent that men of affairs have loaned their influence so that repairs which have been badly needed for years have been pushed to completion and the road proposition has been generally improved in every locality. But what has been done in this direction is a mere suggestion to what is yet to come.

The crusher business is really in its infancy like the concrete business—we are only learning how to employ it to advantage. Machinery for crushing is being developed and perfected to a greater extent that any other line of stone working machinery. The reason for this is the great saving that has been accomplished by the introduction of the crushing machine and the further economies that have been secured by the more or less radical and rapid improvement that have been brought out by the various concerns who have developed this class of machinery from time to time. The price of stone at the crusher is much lower than it ever was by reason of these same improvements and a crusher plant that was perfect two years ago is a back number to-day.

A review of the modern crusher plant would not be out of place at this time in view of the fact that so many people are interested in the product of the rock crusher who have never seen a well

equipped plant. This is even the case in some instances where people have to depend upon their supplies from the crusher in conducting their own affairs.

Details to Be Considered.

The first requisite to a profitable crusher proposition as it exists at present is the location with reference to transportation facilities, and the next is to discover a quarry possibility that can be cheaply manipulated. In figuring quarry costs the first thing that becomes expensive is the stripping or removing the soil and clay from the surface of the stone. In the case of open face quarries the expense of stripping is practically eliminated for the reason that the quarry operations consist of cutting the stone out of the face of the cliff or bluff and gradually clearing off the top as the work penetrates back into the stone. The next problem to consider is the method of delivering the stone to the crusher. In some cases where open faced quarries are worked it is possible to have the receiving door or hopper above the crusher located so far below the level of quarrying operations that it is a simple matter to deliver the stone by gravity through an open chute. In most cases, however, it is found necessary to elevate the large pieces of stone produced by drilling and blasting by means of quarry cars and a tramroad to reach the crusher upon an incline, and in this case the cars are mostly commonly elevated by means of a cable and drum.

In the first instance, where gravity is used either in part or as the whole operation of delivering the rock to the crusher, the cost is comparatively nothing while in the operation of the cable drum, the cost of cars and the incline constitute a large item of expense and must be figured into the crushed stone. After the rock reaches the receiving floor or hopper of the crusher it is fed to the crusher proper in quantities that will not retard the motion of the machine and yet will give a volume, as near as possible to the calculated output of the plant. The hopper floor may be provided with more than one crusher according to the size of the plant and several crushers may be working on different sizes of stone at the same time. The type of crusher to be selected depends largely upon the kind of stone that is being crushed as well as the purpose for which it is to be used.

The Crusher Proper.

The modern rotary crusher is somewhat upon the principle of a coffee grinder upon a large scale, the crushed rock falling into a bin leading to a hopper which feed an automatic elevator where the entire product is carried up again to the screen which is a device for separating the stone into as many various sizes as may be desired and dividing the dust and fine screenings from the clean crushed rock.

The jaw crusher is a machine which is built upon the principle of closing a book. When the jaws are partially separated the large pieces of rock are placed between them and the crushing is accomplished by simply closing the jaws together. The crushed rock from such a machine takes the same course as that just described for the rotary crusher. The separating screens turn back to the receiving floor of the crusher all the broken stone that will not pass the largest screen. All the stone which will pass the screen is automatically graded and separated and then deposited into bins located directly over the siding in such a way that the cars can be placed right under the discharge chute from any of the bins which contain the different sizes of broken stone, screenings or fine dust as may be desired for shipment.

Importance of Plenty of Power.

The power department of a crusher plant is always an important feature. A great deal of heavy material must be elevated, conveyed and manipulated. At least one very ponderous machine must be propelled with great precision and in most instances steam from the boilers must be piped to the quarry to operate the steam drills and even if they are using air drills in the quarry the air compressor must be run either direct from the engine or from an electric apparatus which is power driven. Formerly there was a great deal of trouble in crushing plants because they were unbalanced by having less power than the requirements really called for, but this has been, to a great extent, eliminated because the expert machine builders who make a business of installing crusher plants will not countenance an insufficient power proposition no matter in what other direction economies may be practiced.

Since the crusher plant must be located where rock can be obtained as cheaply as possible, they are nearly always located in out-of-the-way places that are of little value for any other business or for the farmer and to supply fuel to the plant sometimes becomes no small item of the expense. The railroad crusher plant is generally taken care of in this respect by the railroad company who furnish them from their own supply of coal sending cars loaded with coal to the crusher and hauling away the crushed rock in the same cars.

The Cost Varies Materially.

A glance at all the conditions which have been cited will show that the cost of producing a cubic yard of crushed rock at one plant would be little or no criterion for the cost of the same amount at some other plant. Generally speaking the quarrying cost and the cost of delivery to the crusher is considerably less in open faced quarries than where the quarrying operation is carried on below the surface. The nature of the rock constitutes another item of difference for it is much cheaper to crush soft limestone than hard granite and some sandstones which are softer or rather easier to crush than either limestone or granite wear the working parts of the crusher so rapidly that the repair bill and consequent delay and curtailment of the output cut a tremenduous figure of charges that have to be taken into consideration when computing the profits.

Introduction of the Power Drill.

It was only a short time ago since the greater proportion of the quarry operations were conducted by the use of the hand drill. Two or three men would assemble around a bar of iron sixteen to twenty feet long and an inch and one quarter in diameter flattened at one end and peck away upon the surface of the rock until they succeeded in sinking it to the depth desired. The hole was then loaded with powder, and shot by means of a fuse. At the building of the Hoosac tunnel in Massachusetts a number of years ago, the excavations were begun by this ancient method, but before the great tunnel was completed a power drill was invented which could do more work in an hour with the assistance of one man than three men could accomplish in a month in the old way. The power drill is now almost exclusively employed in the quarrying operations of this country and they have been introduced in all the principal quarries of Europe and in fact of the entire world. The power drill to-day constitutes an indispensable quarry equipment, for a modern crusher plant would require quite a little army of men to keep it supplied with stone from the quarry if all the drilling had to be done by hand.

A Word About Costs.

The macadam stone that was broken up in the old time workhouse by hand cost a minimum of $1.25 per yard for it was very few of the petty convicts who could be made to produce more than half a yard a day, and at best it was extremely unsatisfactory for road making purposes by reason of the extreme irregularity of sizes. The quality of macadam and ballast rock that comes from the crusher plant not only constitutes an enormous improvement as to the uniformity of size, but the price has been lowered considerably for some crusher men endeavor to figure the entire cost of quarrying, crushing and screening or separating their stone at the plant to be 25 cents a yard and in many cases this low figure has been secured for particularly advantageous runs. However, it is safer to figure from 40 to 50 cents even with the best equipment and under the most advantageous circumstances.

A big crusher plant running a 1,000 yards a day frequently finds a great source of inconvenience by reason of car shortage, for the product of the crusher must be moved out as fast as it is made if any money is to be earned by its operation for it is absolutely necessary to shut down the plant in every case where the product can not be moved out. The shutting down of the crusher is about as expensive a proposition as any one would care to calculate. Most of the help has to be employed regularly and this makes a large amount of fixed charges rolling up against the shut down of operation and nothing is being produced to offset the expense. True, in cases of great stress the crusher operator has been forced to pile up the product of his crusher by reason of the lack of transportation or car equipment but this brings another handling of the heavy material into the case and eliminates every chance there ever was to make a profit out of it.

The Great Problem.

The great problem before the crusher operator always will be that of shipping facilities or of getting his product away from the crusher and into the hands of the user. Every other detail of the crusher business can be handled in more ways than one or by a combination of the well approved sytems already developed. The whole investment in quarry and plant absolutely depends upon prompt service in this direction and the few crushers that are provided with a private means of delivery outside of the railroad equipment certainly have a great advantage over the others.

In the filling of ballast contracts, there are always two limits to be taken into consideration, the first being the amount of stock that can be put through a plant according to its equipment and the other is the promptness with which the cars will be supplied and the product moved out. It has been claimed that where the rotary crusher is employed that it costs a great deal more to send crushed limestone through a two inch ring than through a 3 or 3½ inch ring and some crusher men use two crushers, one with 3½ inch ring and then the same stone is delivered to a smaller size crusher which takes the 3½ inch stuff and recrushes it to a 2 inch, or as is sometimes the case, a 1½ inch ring. The sizes of crushed rock for railroad ballast most often specified is that which will pass a 3 or 3½ inch ring according to the opinion of the engineer, but the concrete contractor always prefers a much smaller size, the 2½ inch ring, the 2 inch ring and the 1½ inch are what he will invariably specify. Such sizes in combination with fine screenings and sand make the ideal concrete aggregate. Many concrete contractors have found crusher dust useful in making the top dressing for a walk or the outside dressing for retaining walls where they can secure it as cheap or cheaper than sand.

The development of the crusher business is indeed the greatest feature of the stone quarry industries and there are large profits to be made where good business methods and efficient practice is developed, but it is not without its drawbacks and all of them should be carefully considered.

Now Operating Crusher Plant.

SCHUYLERVILLE, N. Y., July 5.—The new stone crushing plant installed by the Champlain Stone and Sand Co. at Northumberland, a short distance north of this place, is now in running order. The plant is of modern construction and will be operated by Sandy Hill parties, who own most of the stock. It has a capacity of three to five hundred yards of crushed stone per day. Shipments can be made by boat or rail without transferring either the raw material or finished product by teams.

The uncrushed stone from the quarry is conveyed to the crusher over about nine hundred feet of railway by gravity. A unique feature of this railway, which was designed by Engineer McCarty, is that notwithstanding the elevation at which the cars are required to land is some six or seven feet above the grade of highway, upon which the central section of track had to be laid, the down grade to highway and the upgrade to destination are so well balanced that the force of gravity causes the car to land gently at the platform. Michael O'Leary, who has had a life long experience on public works and stone quarrying, will have charge of the working force at this plant. Orders for thousands of yards of crushed stone have already been received so that forty to sixty men will be employed.

Purchase Trap Rock Land.

HARTFORD, CONN., July 8.—The Connecticut Trap-Rock Quarries Co., of which James H. Cooke, of this city is president, has purchased a tract of land, 150 acres in extent, near Cat Hole, between Meriden and Berlin, in which there is a large supply of trap rock. The purchase of the property means much to Meriden in the way of enlarging one of its most important industries.

Enjoying Nice Business.

LE ROY, N. Y., July 10.—These are busy days at the plant of the General Crushed Stone Co., northeast of town. One day recently some 75 cars of stone were shipped constituting 2,357 tons. The only route for shipping stone from this plant hitherto has been over the Lehigh Valley, but now a switch is to be laid across the Carey farm to the track of the B., R. & P., a distance of about half a mile, so that the stone can be shipped out over this road as well.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually.

Peter Martin, Huntington, Ind.....President
O. F. Perry, New York City.....First Vice President
W. B. Hill, Kansas City, Mo.....Second Vice President
A. A. Stevens, Tyrone, Pa.....Third Vice President
C. W. S. Cobb, St. Louis, Mo.....Treasurer
B. H. Defebaugh, Louisville, Ky.....Secretary

EXECUTIVE COMMITTEE:

Chas. Warner, Wilmington, Del.; O. W. Robertson, Milwaukee, Wis., and the President.

Official Organ, ROCK PRODUCTS.

Care in Shipping Lime.

"Look out for the little things, the big things will take care of themselves," is a motto applicable to all businesses, and very much so to the lime industry at this time. Especially is this essential in shipments of lime in bulk.

Every manufacturer is desirous that the article produced by him, and upon the quality of which depends his reputation, shall be of the very best quality in that particular line. His raw material is carefully selected before burning, and every detail entering into the producing of the commercial and marketable commodity is thoroughly and well gone into. The finished lime is now in shape for shipment and the manner of handling from the point of production to the actual point of consumption are prime factors in the retaining of the reputation already established by the producer.

Where shipments in barrels or bags are made, it is safe to assume that the lime will arrive at the point of consumption in the best possible condition for use, and the producer feels secure in the fact that he has taken every precaution to insure the delivery of his product in the form and condition in which it is at its best for practical use with the best results.

With the large demand for lime, and the necessity for prompt shipments which at times are delayed owing to lack of supply of packages, shipments have been made in bulk in many instances, the lime simply loaded into the car in bulk form and unloaded by the consignee at destination, whence it is either placed in bins in the storehouse, or delivered direct to the point of consumption, as the necessity of the case demands. This form of shipment certainly facilitates quick and prompt delivery, and works admirably where the the consignee's siding is alongside of his warehouse, or where the railroad station at which the car is received has facilities for unloading the lime from the car under cover. There are, however, dealers and users who are not so fortunate; where the nearest point of railroad delivery to their storehouse or yard is in the open. In this event, the car arrives at destination, notice is sent to consignee of arrival of car, and in order to avoid payment of car service or demurrage charges, he immediately starts to unload the same. The lime in the car is in the best possible condition for use, and if used at the time of its arrival, and in the condition in which it arrives, would fully justify all the claims for merit made for it by the producer, but it is now subject to the atmospheric conditions of a damp or rainy day, or may be unloaded in a damp cart, and stored in a bin, still retaining the dampness and moisture accumulated in this unloading.

Not alone is there the attendant danger of fire to the bin or warehouse in which the lime is stored by the heating up of the material caused by this absorption of moisture, but there is danger to the reputation of the manufacturer, danger in the possible failure of the lime in the work for which it is intended, because the elements above described certainly do act toward the deterioration of the original quality of the material.

The lime producer should therefore be thoroughly cognizant as far as is possible, with the condition that govern the reception of each and every shipment of his material, and should use his every endeavor to maintain the quality of his material by strict watchfulness of every detail of handling from the time it leaves the plant until it is used in the work. This can only be done by keeping constantly in touch with all his customers; advising them as to the necessity of having dry bins in which to store the material; keeping posted as to what conditions exist at the point of delivery especially where shipment is made in bulk, and if there is any possibility of his product being subject to deteriorating influences by reason of any of the conditions above cited, then, and in that case, shipment in the proper form of package best adapted to the particular case should be urged with a frank explanation of the why and the wherefore.

Precautions of this character will result in mutual benefit to both the lime manufacturer, dealer and consumer in the establishment and maintainance of confidence in each other, and in the intelligent and economical handling and use of a material in which they are all interested.

A Big Enterprise.

SPRING CITY, TENN., July 16.—Work is progressing rapidly on the kilns of the Southern Lime Co., which have a total daily output of 1,000 barrels of lime. The company will also build at once 100 houses, and plans are being formulated for the building of a furniture factory, a large cooperage and heading plant and a distillery.

Spring City with its many resources is ideally located for a hustling little manufacturing city, and with men of the practical business calibre as those who compose the Southern Lime Co. to develop its natural resources an industrial awakening is sure to follow.

A Very Promising Outlook.

HAMBURG, N. J., July 19.—As evidencing the prosperous season of 1906, Mr. A. E. White, general sales manager of New Jersey Lime Co., writes: "Our business is on the increase. We have added four new kilns this year. Lime running better than ever, prices good with a tendency to advance slightly, and our company reaping benefits accordingly. New business being added daily and things look good."

This is certainly a healthy state of affairs.

All on the Increase.

DANBURY, CONN., July 16.—The capacity of the New England Lime Co.'s kilns at Canaan, owing to the successful introduction of gas for burning is increased from 80 barrels per kiln to 100 barrels, making a total output of 700 barrels daily. The company's kilns at New Milford will also use gas for burning, and plans are now in course of preparation for the erection of gas kilns at its plant at Adams, Mass.

The Connecticut Lime Co. and the Connecticut-Western Lime Co are both enlarging their equipment. Considerable anxiety is occasioned in that locality owing to the scarcity of the wood supply, and possibly the near future will find gas as the lime producing agent of the neighborhood.

Montana Has High-Grade Lime.

HELENA, MONT., July 14.—The Boulder Lime Co. with a capitalization of $200,000.00 in $1.00 shares, of which Mr. W. W. Dunks, of Butte, is president; Mr. Enos Thomas, vice-president; J. B. Maxfield, secretary-treasurer; I. A. Leighton and B. F. Forbes directors, all of Boulder, have opened up a limestone quarry 12 miles east of Boulder. The property contains some 160 acres of blue lime rock, which it is claimed analyzes 98½ per cent lime. It is expected that work will be promptly started for the erection of kilns and other machinery, and that the company will shortly be turning out a high grade lime.

Spreading Out.

LARAMIE, WYO., July 14.—The Herbert George limestone quarries situated near this city have been purchased by the W. H. Holliday Co., who will at once proceed to increase the output of the quarries which already ship to most of the sugar factories in northern Colorado and Nebraska.

METHODS OF LIME-BURNING.

Decrease in the Supply of Wood Making, Its Use Practically Prohibitory as Fuel.

The denudation of the forests and consequent shortage of timber in all parts of the country is much more serious than it appears to be at first glance. Already it has made itself felt in the furniture, cooperage, veneer and kindred trades in the lack of supply of the various woods and the high prices demanded for the respective finished products, and the swing of the pendulum is now toward the manufacture of lime.

Lime is well conceded to be one of the most abundant basic materials on the face of the globe and in addition to the position it occupies as a building material, is an absolute and indispensable mineral in plant life, and the products therefrom. The present generation will therefore see no reduction in lime consumption, but rather, on the contrary in this growing and constantly expanding country of ours, an increase.

New uses and new markets in order to create new outlets for his material is the watchword of the progressive manufacturer whose ambition is toward increased production, necessitating enlargement of his plant, but in the energy and endeavors expended in the developing of the new markets for the finished material, the manufacturer must not lose sight of one extremely important item—the fuel with which he burns his limestone to produce the marketable commodity.

With quarries and kilns so located that low priced or waste timber is easily obtainable, and with rail or water transportation facilities for access to general markets, conditions are ideal and will remain so while the wood holds out, but that's the question. How long will the supply of wood hold out at a non-prohibitive price, and how soon will it become necessary to arrange or provide for other character of fuel?

Of course, without very materially changing the construction of the kilns in which wood has been used for burning, coal can be used as fuel, but even with the question of coal satisfactorily adjusted, there still remains the problem, will the coal produce the same high quality of lime as that which is wood-burnt? Experience and practical results reply in the negative for the reason that combustion is not so thorough where coal is used in the burning of limestone. The manufacturer's reputation, made by hard, conscientious work in the production of a dependable material ad fair and square dealing, is paramount with him. In order to maintain that reputation for himself and his brand, which have both stood the test of time, it behooves him to obtain a fuel which in its combustion qualities, will practically equal that afforded by wood in the burning of lime, and will produce the same results.

This condition of affairs has already made itself felt in various parts of the country, and from experiments first and practical experience last, the use of producer gas, generated from coal has been found to give excellent results. Gas fires are absolutely clean at all times, no clinkers, and no cinders, and the lime produced is found to be much whiter than that produced from wood. Gas also produces a more intense heat and consequently increases the capacity of the kilns.

The impending scarcity of the wood supply in various localities is causing considerable anxiety on the part of the lime manufacturers who are now seeking a substitute fuel which will produce equally good results. Of course the introduction of any new method in any new industry occupies the position of a stranger in a strange town, in that it is subject to doubt, and must stand careful scrutiny, and must produce results. Producer gas has been tried and has not been found wanting, and it is to be hoped that the manufacturer in these hustling days of a busy season will look ahead into the future, and not wait until he is confronted with many orders for his material, and then find that he lacks the proper fuel for the production of the same.

Up to date equipment in each and every department of any industry, enables the manufacturer to keep step in the procession and obviates any possible mis-step or halt in the march toward success.

First Cost vs. Repairs.

A thing worth doing is worth doing well. The purchase of a water-proof coat often saves double its cost in lessened doctors' bills, and this rule should be applied to the construction of kilns by the lime manufacturer.

The cost of repairs to injudicious, haphazard construction of kilns, designed in many cases by unpractical theorists, means not only loss of money and loss of business, but the loss of that which can never be regained—time.

The man who is about to enter this field, should first consider the geographical location of his quarry with reference to the obtaining of the most economical fuel and to the reaching of commercial markets at advantageous freight rates. With these two elements settled to his satisfaction, he who wants to succeed should have as his motto "the best is none too good," and even though the first cost may seem a little high, the results obtained with a kiln properly built by experienced men, and the saving in repairs, will more than offset the seeming extra expenditure.

Storage of Hydrated Lime.

Will magnesia hydrated lime lose its strength with age when stored in paper bags, is a question propounded by one of our subscribers, and for the benefit of those not thoroughly conversant with the facts, we would state:

Magnesia hydrated lime, packed in tightly made paper bags, properly tied and kept in a dry place, would lose very little, if any, of its strength within the period of a year. Of course, if kept stored for any longer period, repeated changes of moisture would have the effect of sur-charging the atmosphere immediately surrounding the outside of the package, creating a sweaty moisture produced shell. This would certainly tend to injure the quality of the lime. However, dealers and others handling lime will certainly have no necessity to hold any quantity in stock for even as long a period as a year, and if stored in a dry place, whether in paper bags or in barrels, the lime should lose none of its quality.

Enlarging Plant.

HUNTINGDON, IND., July 18.—New air compressors are being installed at the Huntingdon plant of the Ohio and Western Lime Co. and their Gibsonburg plant will be improved by enlarging the hydrating plant and building additional kilns at a cost of $25,000.00. The hydrated lime manufactured by this company is especially adapted for the manufacture of sand-lime brick.

A Modern Lime Plant.

YORK, PA., July 17.—The lime plant of Steacy, Wilton & Co., adjoining the Smyser farm in West Lancaster township, recently purchased by Lowell M. Powell, the millionaire copper magnate and associates, is to be thoroughly improved and will have ten kilns of the most modern type in operation, with a total capacity of about 1,500 barrels per day. Electricity generated on the property will be the motive power of the entire plant, which will include a plant for the manufacture of barrels for the company's use. This plant will eventually turn out 2,000 finished barrels daily.

The barrel factory, storage warehouse and power house are located west of the kilns. To the east of the kilns a switch will be run for the handling of the coal which will be used for fuel. An additional trestle is now being built by the York Bridge Co. to the south of the kilns, which will be used for hoisting the limestone from the quarries to the kilns. With the progress that is being made in the installation of new machinery and new kilns, the plant should come into bearing early in the month of August.

Ready to Begin Operations.

WOODSTOCK, VA., July 10.—The Woodstock Lime Co., which was recently organized has elected the following officers: A. G. Combs, of Vienna, president; Hubert Shockey, of Vienna, secretary and treasurer, and A. G. Combs, Hubert Shockey, J. W. Dodd, Washington, W. H. Fink, of Alexandria, and R. W. Moore, of Alexandria. The company has purchased the Shockey lime quarry on Pugh's Run and some thirty acres of Dr. Triplett, and will go to work at once to erect kilns. The lime of this quarry is almost pure, analyzing over 99 per cent of lime. Operations are to be carried on in an extensive way by the company.

Form New Lime Organization.

BAKER CITY, ORE., July 12.—The White Crystal Lime Co. has been incorporated here. The capital stock is placed at $60,000.00, divided into 600 shares. The incorporators are W. F. Butcher, John L. Rand and John Waterman. The new corporations takes over the property east of Durkee that has hitherto been operated by an Idaho company with an equipment for turning out 50 barrels a day. Col. Butcher says that the new company, which will embrace all that were in the old, will prepare to install a plant that will be able to put out 300 barrels of lime, of a quality only found in two other places in the world—the Black Hills and at a South American point. Just how soon this will be done depends upon circumstances which are of a business character. He also says that if they were to operate to full capacity they would have a mountain of stuff that could not be worked out in half a century.

Steam Instead of Horse Power.

MARTINSBURG, W. VA., July 18.—A miniature engine has been installed in the plant of the Standard Lime and Stone Co. for the purpose of hauling the heavy trucks of stone from the quarry to the crusher. This work was originally done with horses, but the installation of the new engine which has been christened "the E. F. Milliard," in honor of the superintendent, greatly facilitates the handling of the material to be burned in the kilns.

Increase in Use of Gas.

GADSDEN, ALA., July 13.—Two new gas kilns are now being installed by the Legarde Lime and Stone Co., near this city, and gas will also be generated in the two kilns already in use from the coal burned. Many other improvements are being made which when finished, will make it one of the most extensive plants in the State.

A Saving of Gravity.

CANAAN, CONN., July 14.—The masons are now placing the linings in the first kiln of the Hadsell Lime Co., the construction of which plant has been designed and is under the supervision of Mr. Wallace W. Burghart. A large trestle 250 feet long, varying in height from 15 to 36 ft. will be one of the features of the plant, for the purpose of utilizing gravity, the loaded car from quarry to kiln returning the empty car from kiln to quarry. September should see this plant turning out lime of the very best quality.

Tennessee Marble Lime Co.

KNOXVILLE, TENN., July 10.—It is a well known fact that Tennessee marble contains the highest percentage of calcium carbonate of any marble in the United States, chemical analyses showing 98.78 per cent. The Tennessee Marble Lime Co. have two kilns at Luttrell, Tenn., and three at the Ross Marble Co.'s quarries, a few miles from Knoxville on the French Broad river. They have a capacity of over a thousand barrels of lime per day and their output is practically all sold, as the superiority of this lime is well known and it has a very wide sale. The cost of production is very much less than the usual lime kiln, as the crushed rock and spalls from the quarries at these two points are purchased at a great deal lower price than it could be quarried.

A similar kiln located in the vicinity of Concord is controlled by John L. Boyd, and is working to its full capacity.

Change of Management

MANISTIQUE, MICH., July 17.—Mr. G. J. Nicholson has recently taken the management of the White Marble Lime Co., of this city. This company has lately had a modern hydrating plant installed by the Clyde Iron Works, of Duluth, Minn., and is turning out a hydrated lime of the highest character, and one that is especially adapted for use in the water-proofing of cement blocks. Success will surely follow the company's business under the able management of Mr. Nicholson and he has our best wishes to that end.

The Ozark Lime and Cement Co. has incorporated at Parsons, W. Va., to manufacture lime and cement, with a capital of $10,000.00, of which $5,000.00 is subscribed and $500.00 paid in.

The Cox Lime and Stone Co. has been incorporated at Norristown, Pa., with a capital of $50,000.00.

Contemplated Plant at Hagertown.

HAGERSTOWN, MD., July 12.—The J. T. Richards limestone tract of 124 acres at Pinesburg, has been purchased by Mr. Frederick A. Wright, of New York. Mr. Wright represents a syndicate who will organize a company to open quarries on the tract, and manufacture cement, burn lime, etc. Grading has already started for a railroad switch to run into the quarry.

An Era of Prosperity.

CHICAGO, ILL., June 29.—The Austin Manufacturing Co., the well known makers of crushing equipment say: "We have just installed a large crushing plant at Williamsport, Md., which is not far from Hagerstown, for Mr. Mike Elmore who has a contract for furnishing a large amount of ballast for the Western Maryland R. R. Co. This plant consists of one No. 8, one No. 6 and one No. 5 Austin crushers, together with elevators, screens, hoists, cars, etc. We have likewise just closed a contract with the Elk Cement and Lime Co., of Petoskey, Mich., for a large crushing plant consisting of one No. 8 and two No. 5 Austin crushers together with two elevators, two screens, two Austin standard friction hoists and fifteen Austin rear end all steel dump cars. This will be decidedly the largest crushing plant when completed in that section of the country. We have also just secured an order from the McCall Ferry and Power Co., No. 60 Wall St., New York, for two of our No. 8 Austin crushers with two No. 8, 86 feet center standard elevators and two 48 inch by 12 feet standard Austin revolving screens. We also have just booked an order from the Kansas City Portland Cement Co., of Kansas City, Mo., for one Austin No. 7½ crusher and two No. 3 machines. We are just executing a large order placed with us some two weeks ago for the Lehigh Stone Co., of Kankakee, Ill., for a plant consisting of one No. 7½ and two No. 4 Austin crushers together with elevator, screen, two friction hoists, dump cars, etc. These are all exceptionally large plants as you will see, in fact, they are much above the average. We are loaded down with business in this line, all the above orders having been booked within the past three weeks. In addition to these we have sold a large number of smaller plants within the time stated."

The Hoosac Valley Lime and Marble Co., of New York, has been incorporated with a capital of $150,000.00. Directors, T. D. Connors, P. McNulty and J. J. Cavanagh, New York.

The Rockwell Lime Co., of Chicago, Ill., has been organized with a capital of $2,500.00. Incorporators, John W. Kinnare, John C. Thompson and John Killeen.

The Cubbins Lime and Cement Co., of Memphis, Tenn., has been organized for the purpose of wholesaling and retailing all kinds of building material. Their warehouse is located at Brinkly Avenue and L. & N. railroad.

The City Lime, Brick and Lumber Co., of Camden, N. J., has incorporated for $400,000.00. They will manufacture and deal in lime, brick, stone and building materials. The incorporators are Hiram E. Budd, Jr., Charles G. Dubell, and J. Wesley Budd.

Hydrated Lime as A Fertilizer.

Farmers in many different sections of the country have been testing hydrated lime for six or seven years. It has been tried on all kinds of soil and with most kinds of crops and the results have been such as have never been surpassed by any other fertilizer. In those communities where it has been longest in use, it has entirely superseded the commercial fertilizers. It has proven itself better than the best of these and yet it can be produced and sold at a price less than the cheapest are sold for. Among the hundreds of farmers who have given it a trial we know of not a single one who does not commend it. We could fill pages with testimonials voluntarily given by these telling the story of actual results. We venture the prediction that before another decade rolls round, that farmer who does not use hydrated lime fertilizer will march in the rear rank and be known as a "back number."

Cement.

STANDARD SPECIFICATIONS.

How Developed and Their Important Bearing Upon the Industry.

The standard specifications for cement of the American Society for Testing Materials, adopted in November, 1904, have been accepted as standard by the various scientific bodies having to do with the question of cement in its various forms. Copies have been spread broadcast throughout the country for the purpose of educating the public at large as to what tests are necessary and how such tests should be made to determine just what constitutes a standard cement. Even at this late day, however, there bobs up an occasional specification framed by an individual engineer or architect, containing requirements on which the manufacturer is forced either to decline to supply cement, or if blinded by the hope of financial gain rather than the maintenance of the reputation of his brand, he agrees to manufacture and ship the cement with the idea of blaming the engineer or architect in the events of the failure of the same in the work.

With the enormous amount of Portland cement produced in the United States which it is estimated will reach 40,000,000 barrels in 1906, and the constantly growing demand for its use, ranging from the laying of a cement gutter to the construction of gigantic sky-scrapers, dams, reservoirs, etc., on the strength and durability of which latter are dependent not only the reputations of architects and engineers, but even the lives of our citizens, we must urge absolute adherence as far as possible, to the requirements set forth in the specifications in question. As a basis for this argument, possibly a brief history of just how much these specifications were arrived at; the time and energy depoted thereto and the circumstances under which they were produced, may be of interest to our readers.

Over twenty-one years ago, when the manufacture of Portland cement in this country was in its infancy and when in the minds of architects, engineers and consumers, Portland cement was not Portland unless of imported variety, the American Society of Civil Engineers took the initiative in the matter of testing cement, and in January, 1885, under the rulings of the Society, prescribed a tentative specification covering method of manipulation only, which governed the testing of cement for many years in this country.

In 1899, in view of the then enormous development of the industry, another committee was appointed by the same society to further investigate this important subject, and as a result of its labors produced on January 20, 1903, a report on methods of manipulation for cement testing, which committee is still in existence and will, from time to time, act upon any changes in methods of working.

At about this time efforts toward a uniform specification were made by the American Society for Testing Materials, which is affiliated with the International Association for Testing Materials (of which Professor Tetmajer, the celebrated cement expert, was president) and the Masonry Committee of the American Railway Engineering and Maintenance of Way Association were working in the same direction.

In October, 1902, the Association of American Portland Cement Manufacturers was formed, and at their first annual meeting in December, 1902, one of the first committees appointed was that on Uniform Specifications, whose duty it was to work on the same lines.

While these different bodies, representing the highest degrees of intelligence and skill were at work, there appeared in 1899, the specifications of Rear Admiral M. T. Endicott, giving the requirements for all the work of the United States Navy, and in 1901, the specifications recommended by the Army Board, composed of Major W. L. Marshall, Major Smith L. Leach and Captain Spencer B. Cosby and approved by the United States Engineer Corps. These two specifications, while not quite alike in all their elements, covered requirements which were thoroughly well considered and well thought out.

From the above it will be seen that this was a most opportune time for some one body to correlate all the work that was being done in the big, broad field of cement, for the purpose of endeavoring to arrive at the one desired result—a standard. The American Society of Testing Materials, by reason of its membership which embraces engineers, manufacturers, consumers and testing experts, was best adapted for this character of work, and at a meeting of that society held in the latter part of 1903, a committee was appointed which included as members, all the members of the committee of the American Society of Civil Engineers; seven representative American Portland cement manufacturers; representatives of the two leading cement testing laboratories; one representative of the United States Army Corps of Engineers; one representative of the American Railway Engineering and Maintenance of Way Association; four representatives of the leading railroads; one representative of the American Institute of Architects, and seven representatives of the American Society for Testing Materials.

After some two years of active work, this committee, which it will be seen was thoroughly representative of all interests connected with cement and its workings, produced a specification, which, after having been sent out to letter-ballot in June, 1904, was unanimously adopted at a meeting of the society, November 14, 1904, having been carried by practically an unanimous vote, and constitutes what are now the standard specifications for cement of the American Society for Testing Materials.

To enumerate the details of the hundreds of specifications previously issued by engineers and architects all over the country, all using as a basis the original suggestions of the methods of manipulation of the American Society of Civil Engineers; all varying in their requirements for fineness, tensile strength, specific gravity, percentage of water, and every test to which a cement could possibly be subjected, or to relate the trials and tribulations of the cement manufacturer in his endeavor to produce a material to meet all the elements of these various specifications which differed daily in their component parts, would take up many, many columns of this paper. A standard has now been arrived at, which is the result of untiring work and co-operation of the leading scientific bodies of the country, and these new specifications should be recognized as standard in this country, just as the new English specifications which were arrived at on similar lines, are standard in that country.

Of all the materials of construction subject to the system of testing, cement is probably the most dependent upon the judgment and skill of the individual making the tests. Of course it is practically impossible to eliminate the personal equation of the tester, plus the personal equation of the laboratory in which the testing is done, but the general adoption of these specifications by all users of cement in the United States will certainly tend to standardize Portland cement in this country and will work to the material benefit of the manufacturer in the production of a cement of regular quality, and to the user, not only in the standard results to be obtained, but in educating him as to just what cement is, what tests it should be subjected to and what it will and will not do.

All of the various brands of American Portland cement manufactured by the individual companies who are members of the Association of American Portland Cement Manufacturers, is made and sold subject to the tests of these standard specifications, and for this very reason well deserve the title of "Standard" Portland cements.

American manufacturers have always succeeded in producing standard articles under standard specifications, and wherever Portland cement is required, it should be confined, so far as testing is concerned, these specifications. If for any reason there should be any variation desired by the consumer, this should be the subject of a special arrangement between the parties interested.

THE LEHIGH VALLEY.

All the mills in the Lehigh Valley are "up to the neck" with orders, the kilns and grinding machinery being pushed to their utmost to turn out every pound of material possible; yet the demand increases.

Disastrous Blazes.

Mill "F" of the Lehigh Portland Cement Co., at Ormrod, Pa., caught fire on July 10. From the raw stone house, flames spread to the rock-grinding house, another frame structure, and from there to the engine house, with its comparatively new machinery. A part of the structure in which hoisting apparatus is located, and which connected the raw stone house with the mill proper, was dynamited and stopped the progress of the flames in that direction. The mill proper, in which the roasting machinery is located, is built of cement and iron and was not in danger.

This mill was built about three years ago, and is equipped with the most improved machinery. It cost about $800,000.00 to build and had a capacity of 2,750 barrels per day. The section destroyed is valued at about $100,000.00, on which there is a partial insurance, but the greatest loss to the company will be the decreased output caused by the fire. Rebuilding was at once commenced and it is hoped that under the able supervision of Mr. Chas. A. Matcham, the mill will be in running order within the next sixty days.

The Lehigh Portland Cement Co. was again visited by fire just one week after the conflagration at its Ormrod plant, which destroyed eight of the fourteen houses erected at Fogelsville, Pa., and occupied by families of laborers employed in the construction of the company's new mill at that place.

Railroad Construction Due to Increased Cement Products.

The enormous increase in cement shipments in the Lehigh Valley region has necessitated additional facilities to promptly handle same by the railroads. The Lehigh & New England R. R. Co. has a steam shovel at work west of Nazareth, grading for a double track, which work is being rushed through to completion.

The Ironton R. R. is pushing the grading on their new line from Mill "B" of the Lehigh Portland Cement Co. at West Coplay, Pa., which will run south and east, connecting with the Lehigh Valley R. R. at Catasauqua. This work, when completed, will obviate the heavy expense and delay in hauling over the heavy grade near the old Gilbert quarry, one of the earliest quarries opened in this section.

Mr. Geo. Ormrod, vice-president of the Lehigh Portland Cement Co., and after whom "Ormrod," Lehigh county, Pa., is named, sailed for Europe on July 3 to remain abroad until September. Mr. Ormrod was accompanied by Mrs. Ormrod, and their children, Miss May Ormrod and Mrs. Whittaker.

President Collins and Superintendent Johns, of the Superior Portland Cement Co., have been spending some time in Allentown, Pa., arranging plans and other details for the construction of their new Portland cement plant near Ironton, Ohio.

Mr. A. R. Frey, now with the Atlas Portland Cement Co., at Hannibal, Mo., has resigned his position, and on August 1 will assume the superintency of the plant of the Penn-Allen Portland Cement Co., near Nazareth, Pa. Mr. Frey is one of the "old guard" in the cement industry, having been connected with the Catasauqua Cement Co. for 10 or 12 years, later with the Hercules Cement Co. and for the last few years with the Atlas Portland Cement Co.

The price in the Lehigh region holds firm at an average of $1.60 in cloth at the mill, which is likely to be the figure for the balance of this season.

"Everybody busy; more orders than we can handle," is the brief but explicit report from the Phoenix Portland Cement Co.

The Northampton Portland Cement Co. have four of the long kilns installed and running satisfactorily. Two more kilns will be in bearing about August 1, which will give this plant an output exceeding 2,000 barrels per day.

The quarry for the Atlantic Portland Cement Co., near Nazareth, has been opened up. There

is very little material on the ground as yet for the construction of the new mill, but it is presumed that upon Dr. Bachman's arrival, which is expected daily, that work will progress with rapidity.

"The question with us is not where we can get orders, but how can we meet the demand," is the report of our friend Green of the Whitehall. 1906 will certainly be a banner year for every cement man in the North, East, South and West.

Cement Rock in Montana.

Recent investigations by cement experts of the U. S. Reclamation Service in the vicinity of Havre, Mont., have developed an area of nearly 400 acres of natural cement rock, on the main line of the Montana Central Railway, Great Northern System, with clay of proper chemical composition in the immediate vicinity, to produce Portland cement. The bituminous coal mines throughout the section furnish fuel adapted for the burning of the rock. A mill site and town site have been located and large springs furnish an abundant water supply for domestic and other purposes.

Work is well under way upon two of the four large projects approved by the Secretary of the Interior, the total estimated cost of which is about $13,000,000.00, and upon the entire completion of which depends the reclamation of half a million acres of land. Thousands of barrels of cement will be needed in their construction, and the Service is naturally gravely concerned in the output of the material, as the present unprecedented demand for cement all over the West is already taxing the capacity of mills throughout the country to the utmost.

The Big Things of America.

In our great new country we have the largest dams, largest bridges, largest underground railroad, largest reservoirs, and have just finished the largest cement contract in the world, that for the New York Subway, and in keeping with our doing of big things there has recently been let to the G. A. Fuller Co., of New York, the contract for the Pennsylvania R. R. terminal structure in New York, which it is expected will run over $15,000,000.00.

White Portland Cement at York, Pa.

American ingenuity and perseverance is certainly in a class by itself. In our last issue mention was made of the necessity of a white Portland cement in this country, citing what had been done along these lines by Mr. Jules Gresley, at Liesburg, Switzerland, and referring to the contemplated erection of a plant for the manufacture of this much needed material at Hammel, Ind., by the Art Portland Cement Co. Raw material has now been discovered at York, Penna., which after a thorough investigation by Prof. S. B. Newberry, of Sandusky, Ohio, has been found to produce a pure white cement with the tensile strength and other salient features of the best Portlands. By mixing the cement with powdered marble, the material can be moulded for casts and statuary, having every outward appearance of marble, with the consistency of granite.

We have gone our foreign brother one better in this discovery in that we are able to produce a white Portland cement on this side of water, while Gresley's invention or discovery is not a Portland but a white Roman or natural cement.

Mortar for Laying Cement Blocks.

Thanks to the untiring efforts of the Association of American Portland Cement Manufacturers and the co-operation of the individual manufacturers of Portland cement all over the country, in affording the layman comprehensive advice and instruction as to many requirements necessary for the production of a reliable and dependable cement block, this material is now commanding the confidence of the public at large.

Too much cannot be said on this subject, and we would again cite the proportions of what go to make a very good mortar in which to lay properly seasoned cement blocks, because this is indeed a most important element in obtaining permanent work in cement block construction.

A very good mortar which has been found to give excellent results for the laying of cement blocks is composed of one part ½ Portland cement, ½ lime, and three parts sand.

A Practical Test of the Cohesive Strength of Cement.

How very strong was the cohesive power of cement mortar, was clearly demonstrated by the recent disaster at San Francisco, not by technical laboratory tests, but under physical strain of thousands of pounds. This was particularly evidenced in the new Post Office Building. At the northern end of the structure are numerous cracks many of which are from one to two inches in width, extending clear through the heavy thick walls. Granite constituted the material, the massive blocks of which were united by cement mortar. The fissures caused by the shock are very zig-zaggy, running along through the heavy blocks of granite, but in very few cases do they follow the cement joints. Incidentally, here and there, the cracks followed the cement joints parting the same asunder, but in most instances the obdurate and heavy granite blocks yielded before the cement. The same condition of affairs applies to stone of other character and building material, such as terra cotta. Sandstone in innumerable cases was found to yield before the cement mortar, evidencing the tremendous cohesive power of this really wonderful material after it had firmly set.

Two More Plants for Kansas.

The Central Cement Co. will erect a Portland cement plant seven miles west of Independence. The officers of the new company are: President, A. L. McCoy; vice-president, J. A. McIntee, of Kansas City; secretary, Hampden Kelsey.

Ex-County Treasurer E. B. Skinner, of Independence, Kas., and Dr. R. S. Bartlett, of Colorado Springs, Colo., have taken options on an immense quantity of cement, shale and limestone on Elk river, west of the Table Mound Plant, but in the neighborhood of the Central Cement Co.'s holdings. Colorado, St. Louis and New York capitalists are interested, and the new company is well under way.

With the many Portland cement plants in operation, and the number of contemplated plants, Kansas certainly well deserves the title of the Lehigh Valley of the west.

Cement Possibilities of Oolitic Limestone.

The oolitic limestones of Indiana in addition to their adaptability for use as building stone and lime producing material, also contain the chemical properties necessary for the production of Portland cement. In this age of cement and its enormous use in various forms, possibly with its present four plants and the new mills now in contemplation, the Hoosier state will become, in the near future, an important factor in the country's production of this important building material.

Lancaster Will Have a Cement Plant.

A charter has been granted by the Pennsylvania State Department to the Constoga Portland Cement Co., which will develop the cement deposits at Millway, ten miles from Lancaster. The company is capitalized at $10,000.00. Eastonians representing the same interests have obtained a charter for the Lancaster & Northern R. R. which will connect Lancaster with Millway. The line will join the Reading Railway at Millway, and is capitalized at $100,000.00.

Spreading Out.

The Elk Portland Cement Co., of Elk Rapids, Mich., have just completed a new stockhouse with capacity of 2,000 barrels, in addition to which they have doubled the capacity of their storehouse on the dock. They have also increased their power to 1,000 horse-power. Last spring a foundation was laid and work started on a warehouse for clay, to be 40 x 100 feet, but work was suspended during the busy season, to be resumed later this fall and winter, when additional buildings and machinery will be installed.

Prosperity in Michigan.

The state of Michigan, which is second in the production of Portland cement in this country, is enjoying the present boom in the cement industry. Every portion of machinery in the burning, grinding and finishing departments of all of the mills are being run to their fullest capacity, and every barrel manufactured has a market before it reaches the packing room.

Another Cement Plant for Pittsburg.

Work has begun on the new cement mill of the Illinois Steel Co. to be erected at North Bessemer, Pa., on the Bessemer R. R. which will have a capacity of about 2,000 barrels per day. The raw material will be secured from the different furnaces of the district.

A Second Cement Mill for Iowa.

The Kansas Portland Cement Co. have just obtained deeds for land upon which to erect a second Portland cement mill in the vicinity of Mason City, Iowa. The new concern is capitalized with $1,200,000.00, preferred stock, and $1,800,000.00, common stock, and will, when completed, have a capacity of 3,000 barrels of Portland cement per day.

Personal Paragraphs.

Mr. Thomas F. Richardson, department engineer of the Metropolitan Water and Sewerage Board, of Boston, who has been in immediate charge of the construction of the Wachusetts Reservoir at Clinton, Mass., since the inception of the work, has resigned to become superintendent of the construction of a dam on the Peedee river, at Rockingham, N. C. The dam will be one-half mile long and will develop 40,000 h. p. which will be utilized in cotton manufacture.

Allen W. Dow, for several years inspector of cements and asphalts for the District of Columbia, tendered his resignation to take effect July 1.

Mr. J. W. Ledoux, chief engineer of the American Pipe Manufacturing Co., Philadelphia, Pa., sailed for Europe on June 30, and will remain abroad until the latter part of August.

Mr. Robert W. Lesley, vice-president of the American Cement Co., sailed for Europe July 14, on the American Line steamer St. Paul, and will remain abroad until the latter part of August.

Dr. Chas. F. McKenna, the eminent New York cement expert and chemist, in addition to the various works he has in hand for work at Hartford, Conn.; New Orleans; San Francisco, Cal.; New York and many other states of the Union, has just been awarded the contract for the inspection of cement to be used by the McCall Ferry Power Co., which will amount to about 600,000 barrels.

A Fair Deal.

Demand and supply inevitably rule the market price for any commodity, but there is a spirit of fairness and willingness to adhere to the policy of a fair deal shown by the cement manufacturers in this boom season. Labor, fuel, procuring of raw material and all the elements entering into the production of American Portland cement, are commanding the highest prices, yet the prices which are now asked by the manufacturers for their product, in view of the standard quality of the cement produced, are not excessive, especially as applicable to the many requests for quotations that are daily received by the respective mills.

The Russia Cement Co., Gloucester, Mass., has been incorporated to do business in Vermont. The capital stock of the company is $100,000.00.

The Universal Portland Cement Co. with a capital of $1,000,000.00 has been incorporated at Gary, Lake county, Indiana, with the following directors: Edward M. Hagar, Thomas J. Hyman, Eugene J. Buffington, Kemper K. Knapp and Elbert H. Gary.

The Sierra Portland Cement Co. has been incorporated at San Francisco, with a capitalization of $1,000,000.00, of which $275,010.00 has been paid in. The directors are: Fred E. Mason, John F. Geisendorfer, John Ralph Wilson, Henry Disque and James A. Ballentine.

The El Paso Portland Cement Works, has been incorporated at El Paso, Tex., by Messrs. Felix Martinez, Horace B. Stevens, A. Courchesne and Z. T. White with a capital of $500,000.00 for the manufacture and sale of Portland cement and other products of lime and shale.

Monroe Portland Cement Co., 419 Market St., Camden, N. J., has been incorporated to manufacture Portland and other cements, artificial stone, etc. Incorporators are Anton F. Beier, Bernard J. Krause, Hugh N. Knecht, with a capitalization of $250,000.00.

Concrete

Block Machine Men In Convention.

The second annual convention of the Concrete Block Machine Mfgrs. Association of the United States will be held at the Wayne Hotel, Detroit, Mich., August 8 and 9. Sid L. Wiltse, the secretary, urges the attendance of every member at this meeting, as many matters of urgent importance to manufacturers of concrete blocks will be discussed. The following is the official roster:

PROGRAM.

WEDNESDAY, AUGUST 8.

9 a. m. to 10:30 a. m.—Arrival and registering of Machine Manufacturers and Guests.

11:00 a. m.—Meeting called to order by president.
Secretary's Report.
Reports of Committees.
Reading Special Communications.
Adjournment for lunch.

WEDNESDAY AFTERNOON, 1:30.

Reading extended invitations.
Sales of Concrete Block Machines, the Uses of its Product and the Industry in General—O. U. Miracle, Miracle Pressed Stone Co., Minneapolis, Minn.
Freight Classifications for Concrete Machinery—J. F. Angell, Winget Concrete Machine Co., Columbus, Ohio.
Concrete block insurance—Sid L. Wiltse, Cement Machinery Co., Jackson, Mich.
Specifications for Concrete Block and Brick—Frank L. Dykema, the Dykema Co., Grand Rapids, Mich.
Special Demonstration of Madusa Compound—R. R. Fish, Sandusky Portland Cement Co., Sandusky, Ohio.
What the Government is Doing for Concrete Blocks—Richard L. Humphrey, Engineer and President N. C. U. A., Philadelphia, Pa.

WEDNESDAY EVENING, 8:00 p. m.

Banquet at Wayne Hotel and Adjournment to Electric Park.

THURSDAY MORNING, 9 a. m.

Foreign Trade—M. Wetstein, Ideal Concrete Machinery Co., South Bend, Ind.
Concrete Block Architecture—A. T. Bradley, Century Cement Machine Co., Rochester, N. Y.
Ornamental Products—E. G. Harter, Cement Working Machinery Co., Detroit, Mich.
Advertising—S. J. Young, P. B. Miles Mfg. Co., Jackson, Mich.
Cast Stone—C. W. Stevens, Harvey, Ill.
Coloring of Concrete Products—J. P. Sherer, Nat. Bldg. Block Co., Milwaukee, Wis.
Adjournment for Lunch.

THURSDAY AFTERNOON, 1:30.

Concrete Blocks and Brick from an Insurance Inspector's View—W. G. Sanderson, Inspector and Member Committee on Cement for Building Construction of National Fire Protection Association, Chicago, Ill.
Out West—J. W. Sanderson, Cement Machinery Mfg. Co., Burlington, Iowa.
Trade Journal Advertising and General Publicity—Open to short talks by various representatives present.
The Industry—W. J. Scoutt, American Hydraulic Stone Co., Denver, Col.
Plastering and Lathing to Concrete Blocks—John G. Miller, Winner Block Machine Co., Minneapolis, Minn.
Great and Universal Use of Concrete Blocks and Brick—Discussed by all members present.
Election of Officers.
Adjournment—"Till We Meet Again."

Bay Ridge Cement Block Co., 765 Broad Street, Newark, N. J., has been organized to conduct a contracting and construction business with a capital stock of $100,000.00 bp George McLaughlin, C. H. Kridler, G. H. Widner, all of Newark.

The Point of View.

The trades union people are evidently "working" the press of the country with information tending to undermine the increasing popularity of concrete construction of every kind. The practical advantages and scientific advancement of reinforced concrete as employed in many of the larger buildings in the great cities have evidently attracted the attention of the labor councils who have so long practically controlled the building situation in the large centers of population. Here is a sample article which recently appeared in a number of the best known daily papers of the Middle West, being worked slightly different in each case in order to disguise the common origin:

"There are several dangers attendant upon the use of concrete construction, due to the fact that unskilled labor is principally used in its construction, and also because any mistake in the placement of the steel can not be easily remedied. Practically speaking, the strength of the reinforced concrete girder or beam and its slab varies as the square of the distance between the center of the slab and the center of the steel reinforcement, so that if the steel is misplaced and occupies a position which was not intended, the strength of the beam or girder is materially reduced. The danger of the misplacement of the steel is not the only one attendant upon the use of this new construction, for it is not an uncommon thing to find the workmen using the wrong number of bars or using a different sized bar from that intended. It is impossible on a large job which is being rushed to rapid completion to watch every gang of workmen, and in several instances one or two bars have been left out of beams and girders through carelessness. Such mistakes as these tend to reduce the factor of safety of this otherwise excellent construction."

No more preposterous statement could have been uttered than that above. The general claim of inefficiency or lack of intelligence on the part of concrete workers coming from such a source is quite as amusing as it is false. The concrete workers as a rule will be found quite as intelligent as bricklayers, ironworkers or any other class of workmen employed in the building trades. The greatest advantage obtained by the builder in using reinforced concrete is the superior scientific features of all such structures by reason of the fact that every detail of the work is carried on under the direction of and in personal presence of a specially educated expert in this line. The concrete engineer who places the rods and disposes of the spaces between them, who lays off the span and passes on the mixture of materials as constituting a proper concrete mass is far superior in intelligence to the brick laying boss who is very frequently placed in his commanding position by the will of the brick layers themselves.

The necessary intimate attention of a well qualified structural engineer imparts the element of skill and contributes all that science has developed in every part of the construction of the frame of large concrete buildings. When their work is complete, they invite the most rigid tests and even insist that a large proportion of the spans, arches and columns shall be tested separately as is the case with no other building system. It is safe to say that if all the steel frame buildings and all of the brick and stone wall buildings that have been erected in this country with iron or wood columns and with iron or wood beams should be subjected to one half the tests that are given to the similar number of reinforced concrete construction, more than 50 per cent of them would give way. The factor of safety in all the concrete buildings that have yet been constructed in the United States is not a matter of calculation or theoretical equation applied by more or less competent and experienced workmen but by a demonstration of actual practical tests after completion, in most cases running into figures more than double what the building would ever be expected to or could possibly be made to undergo in its natural use.

No building materials before they are assembled at the job are tested in any way comparable to the tests that are given to cement, sand, crushed rock and the reinforcing bars themselves. The perfection of the materials used in concrete construction is another guarantee of its reliability. The experienced workman who has developed all his skill by the practice of his hands always will mistrust the scientific preparation of the concrete engineer just like the farmer of two generations ago who held in contempt anything that looked like book learning about crops, but the book learning about crops developed the indispensable farming machinery of today, as well as the improved methods of marketing and handling, and the concrete engineer has brought into structural work all that the architect has needed for a century to accomplish a marvelous reformation and advancement in his line, the greatest art that has ever been developed in the brains of men.

Standard Specifications.

What is concrete? What must it do, and really what can it do? What is the best method of reinforcement? What is the absolute strength of reinforcement, and what calculations should govern the reinforcement, are subjects that must be determined by thorough investigation before we can have a standard specification for concrete and reinforced concrete in all its workings.

The report of the Committee of the American Society for Testing Materials made to the Society at its June meeting at Atlantic City, shows that there is yet to be determined a proper formula for use in the construction of reinforced concrete buildings; the proper reinforcement and the proper amount and character of concrete to be used.

The cities of Philadelphia, Chicago, Minneapolis, Milwaukee and Newark, N. J., have proposed ordinances on this line, but in each and every one, there are widely different expressions of opinion as to just what constitutes a standard. The many new buildings of varied descriptions which are being constructed of concrete and reinforced concrete in almost every city of the United States, demand that there should be a standard of uniformity which will insure the permanence and safety of the work to be done. To obtain this uniformity it is necessary that a definite standard be arrived at by practical as well as theoretical tests, and it is to be hoped that the experiments and investigations now being carried on at the Underwriters' Laboratory, Chicago, and also at the Testing Materials Station of the United States Geological Survey, St. Louis, the results of which will doubtless be concluded during the year 1906, will have accomplished much toward the formulation of a standard of which we now stand in dire need.

A Reinforced Concrete Caisson.

Rapidity, economy and safety, three important individual elements were embodied in the special caisson sunk at the foot of Fifteenth St., Jersey City, in the construction of a connection between the Hudson Co.'s tunnels from Morton St., New York, under the North River to Jersey City, with branches to the terminals of the Erie, and of the Delaware, Lackawanna & Western Roads, which is near the working shaft for the main tunnels and was sunk to facilitate the building of the divergent tunnels at their point of intersection.

The caisson which is five-sided and is approximately 100 feet long and 50 feet wide, and was sunk 80 feet through earth and water into the rock, was constructed of reinforced concrete, consisting of a massive concrete block combining a working chamber and an upper chamber separate from the latter. The working chamber will eventually form one section of the low level tunnel; the upper chamber forming the corresponding section of the upper-level tunnel. The lower chamber was provided with an air-tight lining cemented in position to prevent the leakage of air through the porous concrete. This caisson was built in forms on the surface of the ground, where the interior chambers were also completed, thus securing rapidity, economy and safety in the construction which would have been tedious and difficult to have attempted to build underground.

Immense Cement Block Building.

One of the largest cement block buildings in the country will be constructed for the Welch Grape Juice Co. at North Tonawanda, N. Y., at a cost of $100,000.00, by the Durolithic Manufacturing Co. We trust to be able in a later issue to publish details as to the same.

The New Jersey Concrete Bridge Co., Trenton, N. J., has been organized with a capital stock of $50,000.00. Newton A. K. Bugby is the agent in charge of the company and the office is at 135 East State Street. The incorporators are Newton A. K. Bugby, Herbert W. Bradley and Henry W. Corning.

The Indispensable Contracting Feature.

When the concrete building block was first introduced a great many get-rich-quick speculators rushed into the business upon the representations of the salesmen of the machinery concerns, whose business it was to sell machines and who explained that with a few hundred dollars of capital, a man could go into the business of manufacturing a building material that would soon find a ready market. With imperfect information in regard to the workings of the machine itself, with an absolute lack of knowledge as to the nature of the materials employed, the natural result of a total failure followed. Nevertheless a certain proportion of these men who went into the business with the expectation of making a fortune in a few days "woke up" when they realized the actual practical difficulties that presented themselves and set about the discovery and application of a sufficient remedy.

Improvement after improvement was introduced and a vast fund of practical information was accumulated which has succeeded in placing the industry upon a basis which is today respected wherever concrete building material is intelligently manufactured.

The indispensable feature which presented itself in the earliest beginning was for the manufacturer of concrete building material to take the contract for the entire construction of the building to secure the using of his material. The practical mechanic, as he inevitably has on all similar occasions, lined up against the new material and was and still is opposed to acquiring any further useful knowledge outside of the routine of the trade which he has been practicing as a journeyman for a longer or shorter period.

The block manufacturer soon discovered that the contracting business is an undertaking that requires considerable capital beyond the manufacture of the concrete blocks which composed the wall. In many cases all the problems which have been well known to practical builders for centuries had to be acquired by practice and sometimes by repeated failures or at best only partial successes.

The architect, as a class, observing the uncouth work of the inexperienced material manufacturer and in the same person the unskilled builder, naturally held up his hands in artistic consternation and declared that "cement blocks will not do at all." Under the frown of this ancient and accepted arbiter both of materials, construction and design, the manufacturer-contractor persisted in the fight against such odds even with insufficient capital in many cases and he is rapidly winning, if in fact, he has not already won the day, and introduced his material and system of construction upon a basis where a very large number of well respected concerns are earning handsome dividends upon large capitalization.

The contracting feature to every concrete block manufacturer's establishment was found to be quite as important as the proper manufacture of the building material itself. The concerns who were first to achieve success were those who included in the personnel of their organization either a practical builder of experience or a well qualified engineer from a technical school who had learned the theory of adapting materials.

THE NEW CHATTANOOGA DEPOT.

We do not know of a single instance where a concrete block factory has succeeded in "selling building material to the trade" as the expression goes, for there is no trade for them to sell to. The business of the concrete block manufacturer is with the builder direct and without providing for the contracting end of the business, it is a practical impossibility for the manufacturer of blocks to make a success. True there are a few isolated cases where an intelligent farmer has purchased a few wagon loads of standard sized blocks and with them constructed his own cottage where four walls and a roof was the principal requirement, where beauty of design was not considered and where trailing vines or Boskin surroundings could be depended upon for decoration. Such cases have been few and it is safe to say that more than 99 per cent of the buildings that have been made out of concrete blocks have been erected by the contracting department of the same establishment that manufactured the building material.

Proposed Union Station for Chattanooga, Tenn.

One of the most attractive railroad depots in the South, is that shown on this page, which is designed by Architect Donn Barber, of New York, and is to be built at Chattanooga, Tenn., on the site of the old Stanton house on Market street.

The new depot, will be a two-story structure, with an extreme length of 316 feet and a width of 90 feet, and will cover an area of 25,000 square feet. The great metal dome with 62 feet span at the base will be built entirely of structural steel, and will form the ceiling of the general waiting room which will have an area of 5,000 square feet.

Besides the general waiting room, which will open on a 40 feet wide concourse, there will be the ladies' waiting room, smoking room, dining room and lunch counter, barber shop and toilet rooms for both classes. The rooms on the second floor of the new station will be occupied as offices by the different railroad operating lines in the depot.

Maj. M. Dunbar Jenkins, an engineer of national reputation, has been elected Chief Engineer of the depot. Ground has been broken and grading is under way. The engineers are now at work preparing specifications and as soon as they are finished, bids will be advertised for. The building will be built either of concrete, or brick and stone construction, and it is estimated that it will require one year to complete the same from the date of the awarding of the contract.

Doing a Fine Business.

RARITAN, N. J., July 12.—The Raritan Cement Stone Co. is finding business so prosperous that they have opened an office in the Flatiron building. The officers of the company are: Charles Mundy, president; N. C. Neilson, vice president; A. K. Jensen, treasurer; Louis DuBois Watson, secretary. The factory is located at 15 Johnstone Street, and it manufactures "Granolite, the perfect stone," also hollow concrete building blocks made on the well known Ideal machine.

This company has just finished a two-story cement building for J. K. Jensen on Paterson street; another for William Wilson at Eagleswood, is working on another for A. K. Jensen, a three-story building for S. G. Garretson, and the St. Stanislaus' church. It is also manufacturing a large order for South Amboy, another immense order to go to Maryland, and is figuring on numerous jobs, including a big church in Long Branch.

To Make Cement Burial Vaults.

ST. JOSEPH, Mo., July 7.—The Egyptian Vault and Artificial Stone Co. has been organized by C. K. Knight, Emmett Beckley, H. L. Wakler, James R. Clark and Elliott Spaulding with a capital stock of $5,000.00. They will at once proceed to erect and equip a factory to manufacture and sell at wholesale artificial stone burial vaults and moulds for making them as well as the manufacture of all kinds of artificial stone, concrete sidewalks, and retaining walls and the erection of artificial stone buildings of every description.

Fine Block Residence.

Upon this page we present the prospective drawing of a nice two-story residence designed for the use of hollow concrete building blocks by Mr. Henry Wittekind, licensed architect, Chicago, Ill.

Colonial residence; Hollow Concrete Block exterior. Two stories and basement. Shingle roof. The plans will be furnished to accommodate any size blocks.

First floor contains living-room, which has three-side exposure, open fire-place, beamed ceiling, and wood cornice; dining-room with wood cornice and plate shelf; kitchen and pantry complete. Entry with suitable space for refrigerator. Combination front and rear inside stairs.

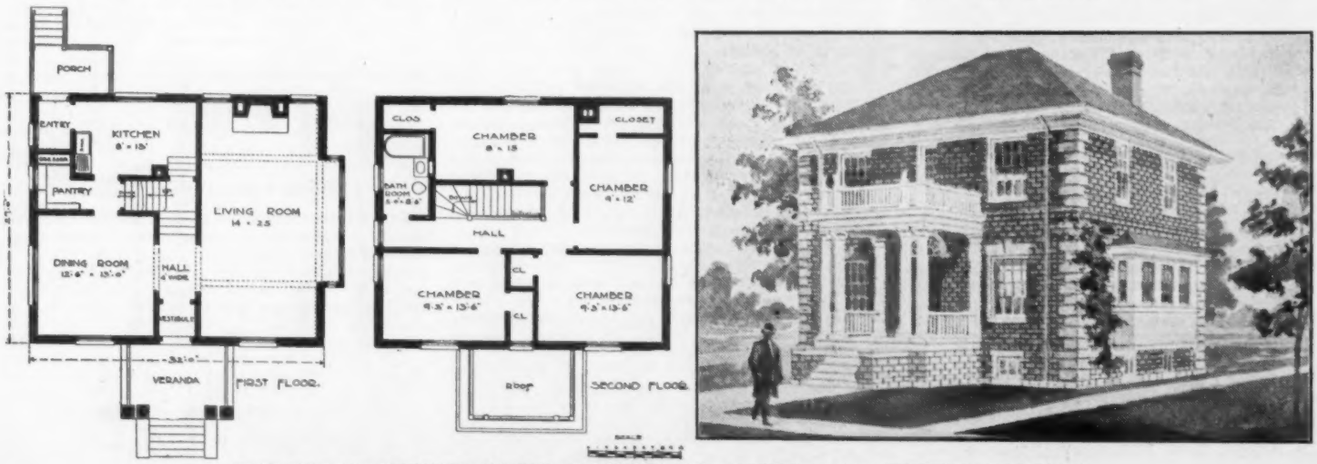
Second floor contains four chambers and bathroom, with modern plumbing. Interior finish in first and second stories is Georgia pine, with Georgia pine floors. The trim in the living-room, hall and dining-room is stained and varnished; the balance of the rooms have the trim finished in the natural.

Basement contains laundry with stationary trays; furnace room and coal bin. Cement floor.

Width 32 feet; depth 27 feet, exclusive of bay window. Height of basement 7 feet; first story 9 feet; second story 8 feet, 6 inches.

Estimated cost $2,800.00; heating not included.

Complete architect's working drawings and detailed specifications, blank builder's contract and bond, and all detailed information required for building the above house, will be sent prepaid upon receipt of $25.00.



FLOOR PLAN AND PERSPECTIVE DRAWING OF CONCRETE BLOCK RESIDENCE, BY H. WITTEKIND, CHICAGO, ILL.

First Reinforced Concrete Building in New San Francisco.

SAN FRANCISCO, CAL., July 12.—The first reinforced concrete building to be erected in the city will be the Bride Building. Work will be crowded forward and the building will be ready for occupancy within four months. The Bride Building was planned before the fire and is the property of the Bride Investment Co. It was originally planned for a class B building. Shea & Shea, the architects, have revised the plans so as to call for a reinforced concrete steel girder structure. When completed, the building will be as good as any class structure. All the walls and floors are to be reinforced. The building is to be 8 stories high. It will be the first reinforced concrete to be finished in San Francisco.

The "Roosevelt" Dam.

SAN FRANCISCO, CAL., July 15.—One of the most stupendous pieces of reinforced concrete work west of the Rocky Mountains will be the building of the colossal dam across the Salt River, in Arizona, thus creating the Tonto Basin. Immense quantities of cement will be required.

This colossal obstruction will imprison the waters of that stream, and will create the largest reservoir in the entire world. The pent up floods will be used principally for irrigation purposes.

In the construction of the dam 240,000 barrels of cement are required. The question of cement was not the least of the problems which troubled the minds of the engineers. The isolation of the dam site sixty miles from a railroad and a tendency on the part of the cement manufacturers to put as high a value on their product as they thought it would bear, offered a problem which nearly stumped the engineering corps. The first bids were $9.00 a barrel, making the item of cement alone a matter of more than $2,000,000.00. Then it was that the engineers got busy.

A superficial and hurried examination of the adjacent region disclosed the fact that a ledge of splendid limestone outcropped just above the dam site, while hills of blue clay were within a short distance. Notwithstanding the vigorous protests of the cement manufacturers and their offer of cement at nearly half the price formerly quoted, the Secretary of Interior authorized the building of a cement mill. This mill has been in successful operation for some months, and is turning out 250 barrels of first class cement every day at a cost which will save the settlers of the Salt river valley more than a million dollars on the price first named by the cement men.

A large force of men are employed at this cement manufacturing plant, and the steady output is more than adequate to supply the constant and heavy demand for concrete. Rock and sand are quite handily located, so that the necessary composite material may be produced in unlimited quantities.

Since the beginning of operations on this immense government work, fully 2,000 men have been constantly employed in the many branches of labor. This gigantic dam which is known as the "Roosevelt Dam" is being constructed of uncoursed rubble masonry, sandstone and cement, with arch upstream. It will be 800 feet long on top, 235 feet at river bed, and its contents will be 300,000 cubic yards. It will rise 284 feet above the lowest foundations and the height of water against the dam will be 230 feet. A power canal 18 miles long with a drop of 220 feet is now being utilized to furnish 4,000 horse power in constructing the works.

When the reservoir is completed the water will flow in the river channel for 44 miles, and then be diverted by means of canals to the irrigable lands.

The reservoir created by the Roosevelt Dam will be one of the largest artificial lakes in the world. Its capacity will be ten times greater than the Croton reservoir. It will contain more water than is stored by the Assouan dam. 1,400,000 acre feet, or enough water to cover that many acres a foot deep will be held in this basin until needed by the farmers in the valley below.

At present, in the lowest part of the reservoir site is a thriving city called Roosevelt with a population of nearly 2,000; a city with electric lights, water works, school houses, stores and churches, which will be submerged more than 200 feet when the dam is completed. 10,000 horse power will be developed from the dam and from drops in the canal all of which will be utilized to pump the under ground water of the valley to lands above the gravity system.

CONCRETE IN SYRACUSE.

(*Continued from page 3.*)

sult is a construction which has a remarkable strength, absolutely fire-proof qualities and which costs from twenty to fifty per cent less than fire-proof steel floors.

A great number of different systems for reinforcing concrete have been invented; the work as executed at the dormitory may, however, be said to represent the very latest advancement in this direction. Two inch hemlock planks are supported on the uprights about 5 feet apart, and on these planks hollow tile, six inches deep, are placed in rows with a distance of about four inches between them. In the spaces between these blocks, are placed steel rods which are bent so as to be located everywhere that tension stresses will occur. These steel rods are tied together with ¼ inch steel bars so as to form trusses. After the steel trusses are put in place, the spaces between the blocks are filled with concrete which is also extended above the blocks, forming a continuous layer over the blocks two inches thick. The concrete is mixed in an immense concrete mixer, driven by a steam engine, one part cement, two of sand and five of finely broken stone, thrown into

CHAS. E. COLTON, ARCHITECT, SYRACUSE, N. Y., SPECIALIST IN CONCRETE CONSTRUCTION.

the mixer together with water, given a few swift revolutions and then hoisted up in an automatic bucket which empties the concrete into wheel barrows, which are wheeled away by laborers and the concrete deposited where desired. An entire floor of 9,000 square feet was thus completed in four and one-half days.

Pioneers of Hollow Blocks.

The first concern to make concrete building blocks in this city was the Paragon Plaster Co. which started January 1, 1904, to put blocks on the market in quantity. This company six months later began the manufacture also of sand-lime brick. The manufacture of the brick and the cement block is carried on at the big plant of the company in the western section of the city.

The company is working largely on a plain unfaced 12 by 24 two-piece block and will make them in large quantities. They now have 150,000 to 200,000 of that description to make at once. W. K. Squier, treasurer and manager of the company is thoroughly convinced that the two-piece block is the correct, scientific and practical way of building brick walls and to obtain the maximum amount of strength with the minimum amount of material and the greatest amount of air space both perpendicular and horizontal. Mr. Squier believes that by this method he is able to obtain the best blocks that have been made up to the present time. He gives the credit to the devices supplied by the American Hydraulic Stone Co. Mr. Squier places great emphasis upon the necessity of buying building blocks of responsible concerns and not from persons who have just capital enough to buy a machine, make a few blocks and then go out of business. He deplores every failure that is made in this line on the ground that it reflects upon the business in general and hurts the established companies as well as others. The Paragan Plaster Co. is now building out its blocks, the Carnegie Library at Syracuse University, which is about half finished and which will cost $250,000.00. They are also furnishing the blocks for a dormitory at Syracuse University which will cost $150,000.00, and they are working on blocks for a chemistry building. One of the large jobs of the Paragon is the Telfer apartment house on Walnut Avenue, and there are many foundations and small factory buildings scattered all over the city. The Paragon company uses gravel or broken stone, sand and cement.

The officers of the Paragon Plaster Co. are as follows: Jacob Amos, president; A. E. Nettleton, vice-president; W. K. Squier, treasurer and manager, W. F. O'Connor, secretary.

Making a Good Record.

The Onondaga Litholite Co. was organized in 1901 to manufacture litholite under the Stevens patent and was the first to start in New York state under those rights. The company at first made no building blocks confining itself to specialties, but later branch out into the concrete block business and it now has a large trade throughout this vicinity. This year the company had all the business it could attend to. The crushed stone is secured at the Split Rock quarries of the Solvay Process Co. which has an enormous supply. The crushed stone before being mixed with cement is double screened and separated into different sizes which are reunited in exact proportions to properly fill all voids. It is claimed it absorbs less moisture than sand or lime stone. The officers of the company are H. P. Warner, president and treasurer; Charles A. Lockard, vice-president; E. J. Page, secretary. The company makes electrical specialties including switch bases in several different styles and partition work. The business of laying sidewalks was instituted the second year the company was in business, and this year, over $100,000.00 worth of sidewalks have been laid. The company also does reinforced concrete work. One of the big jobs on hand now is the Homopathic Hospital which will cost $80,000.00. The company has just finished a business block in Oswego. Among the other buildings erected in this vicinity are the buildings for the Independent Telephone Co, at Oswego, the Carnegie Library at Fulton, the building of the John Single Paper Co, Merrell & Soule factory, the Amos block, the Hanford Manufacturing Co.'s factory of Syracuse, the Burgess Auditorium and Nurses' Home at Auburn and the power house for the Oneida Railway Company.

Doing a Fine Business.

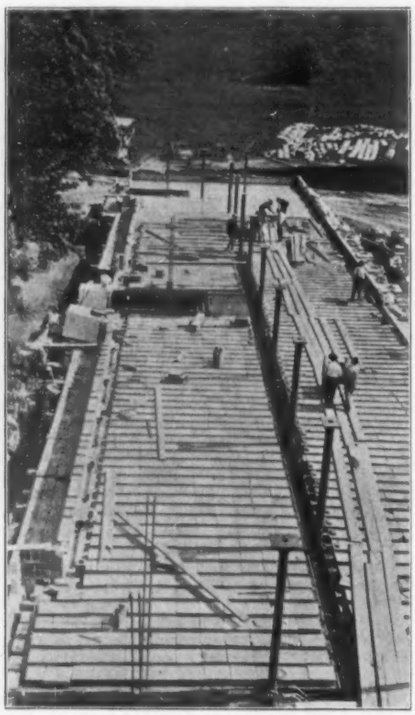
The Onondaga Pressed Stone Block Co. began the manufacture of building block in Syracuse in October of 1904 and has worked up a large business since that time. The officers are as follows: Charles E. Ames, president; Charles E. Colton, vice-president, Burton B. Parsons, secretary, C. E. Munro, treasurer; Edwin C. Ide, manager, and W. W. Taber, Architect and A. P. Mallory, C. E., constitute the directors.

This company holds the exclusive right to manufacture in Onondaga county the well known Miracle Block. It uses sand, cement and crushed stone, the plant being located at 532-4 Canal Street, near Catherine Street, and having a capacity of 600 blocks a week. Standard Portland cement is used and the blocks are furnished in all styles of cut stone faces. They are claimed to be fire-proof, frost-proof and damp-proof and can be plastered directly on the back without lathing. The material is all mixed by machinery. Among the buildings made by this company are the School at Preble, N. Y., $5,000.00; the Markham Brown Iron Works, $30,000.00; the Ebeling seed warehouse, four stories, $9,000.00; Woerner Bros.'s broom factory, $8,000.00; and houses for W. N. Newell, James Barnes, Col. A. C. Chase, Levi S. Chapman, Henry Killian, J. M. Kullmer, B. A. Bannon, Wells Parker, Henry Knowland, John Regan and others. It is claimed that these blocks can be laid below grade at the same cost as a common rubble wall compared with gray lime stone ashlar above grade, it shows a saving of 20 per cent. It can be laid above grade at 20 per cent less than a 12 inch common brick wall and 50 per cent less than common brick wall faced with high grade pressed brick; it costs 20 per cent more than frame.

Commendation from a Leading Architect.

One of the most enthusiastic specialists on the question of concrete block construction is Archi-

tect Charles E. Colton, of Syracuse, N. Y. He was born at Syracuse in 1847, his father being a lumber dealer. Twenty-eight years ago, he began the study of architecture and was in the office of some of the leading architects of this vicinity before he started out for himself. Among the structures which he built in Syracuse are the City Hall, McCarthy building, the Robert Gere bank, the J. P. Kennedy building, the Kirk block, the National Brewery and the new Alahambra Rink. Here are his ideas upon the block question: "I think that the building block is a special material for special uses in special buildings. Instead of being an imitation of anything, it is a building product which has a place of its own and is the best in that place. I believe that the materials should not be advertised as giving the architectural appearance of stone, but as having an undeveloped effect of its own. It has merit enough of its own to stand on its own feet. The concrete block can be made so as to be both frost and water proof below grade and its superiority over rubble stone wall is the same as cut stone ashlar, doing away with the use of 50 per cent of mortar joints which are used in the rubble wall. The saving in cost by the use of block is obtained by the saving of labor in laying. The absolute exclusion of dampness in the cellar wall below grade necessitates in any kind of a wall a coating of Portland



CONCRETE FLOOR BEING LAID AT SYRACUSE UNIVERSITY DORMITORY. TILE READY TO RECEIVE CONCRETE.

cement or hot tar which is recommended to be used in block foundation as an additional precaution and it is the absolute necessity in any kind of a stone foundation wall."

Block Front Skyscraper for Herald Square.

NEW YORK, July 20.—It now looks as if the building to be erected by W. R. H. Martin, on the old Tabernacle site at Thirty-fifth Street and Broadway, will now extend along the whole block front. Mr. Martin is in a fair way to acquire the remainder of the block frontage, and it is rumored that Mr. Martin, in fact, has closed negotiations, paying considerably more than a million for the additional ground. He contemplates erecting one of the finest buildings in the upper part of the city.

Gaining in Favor.

HAMBURG, N. J., July 5.—Mr. A. E. White says, "Concrete blocks and sand-lime brick are both gaining in favor in this territory. The demand for such commodities is good although not up to our expectations for this season. The prices of building materials of all kinds seem to be too high to encourage home building."

Big Company for New Orleans.

NEW ORLEANS, LA., July 9.—The American Manufactured Stone Co. has been organized and incorporated with a capital stock of $20,000.00 and the following officers have been elected: Edward H. Keep, president; Henry F. Hinrichs, vice president; and Francis Bowers, secretary and general manager. The factory which this company will at once begin to erect will occupy an entire square located near the new basin. The machinery and rights of the American Hydraulic Stone Co., of Denver, Colo., have already been purchased and the machines are now on the way so that the new company will be in a position to turn out some of its concrete building stone at an early date. It is claimed by the promoters that New Orleans is an ideal location for a factory of this nature as concrete building materials are especially fitted to the climate and to the requirements of the locality and there is undoubtedly for this reason, a great future for concrete building materials in New Orleans and in the adjoining territory.

Outside and Inside Building Material.

WILKESBARRE, PA., July 5.—Through the efforts of Mr. Charles H. McDonald a company consisting of Dr. W. F. Pier, of Avoca, Pa., E. C. Breisford, Wilkesbarre, Pa., A. L. Lindsay, of Wyoming, Pa., J. W. Held, of Plymouth, Pa., has been organized with a capitalization of $50,000.00 to commence at an early date the manufacture of artificial building material from sand and cement and coloring matter. They expect to manufacture building stone of every description and not only this but highly decorative stone to be used in wainscoting, floor tiling, as well as imitation marble pillars. It is announced that this company will have its plant and equipment ready to begin operation in about six weeks.

Down in Louisiana.

MONROE, LA., July 7.—The Ouachita Concrete Co. that will manufacture hollow concrete blocks, brick, sewer pipe and paving blocks has been organized at West Monroe. The members of the company are J. E. and C. C. Morgan and W. J. Webb. All the necessary machinery has been purchased and the erection of the building for the company's factory has started. They hope to be ready to begin operations by August 10.

Big Concern for New Mexico.

HAGERMAN, N. M., July 1.—The Hagerman Cement Stone Co. has been incorporated by W. S. Davidson, J. A. Farnsworth, J. E. Bryan and C. M. Smith. The capital stock of the company is $100,000.00 and the principal office is fixed at Hagerman with Mr. J. A. Farnsworth as agent. They will at once begin the erection of a factory for the purpose of manufacturing a full line of building materials by the use of sand and cement.

Will Operate on a Large Scale.

OAKLAND, CAL., July 3.—G. A. Peterson and D. O. Wallace, of Oakland, Cal., J. G. Niggle, and A. Weinmann, of San Francisco, Cal., and F. V. Schiller, of Berkeley, Cal., have organized and incorporated the Interlocking Stone Co. with a capital stock of $500,000.00 for the purpose of manufacturing concrete building material of all kinds and for carrying on a general contracting and constructing business. It is stated that they will soon begin the construction of a large factory which will be thoroughly equipped with every modern contrivance for making the best article in their line.

The Philadelphia Concrete Co. of New York has been incorporated with $150,000.00 capital by F. A. Sagerwood, R. McMurtrie, of Philadelphia, and C. Burling, of New York.

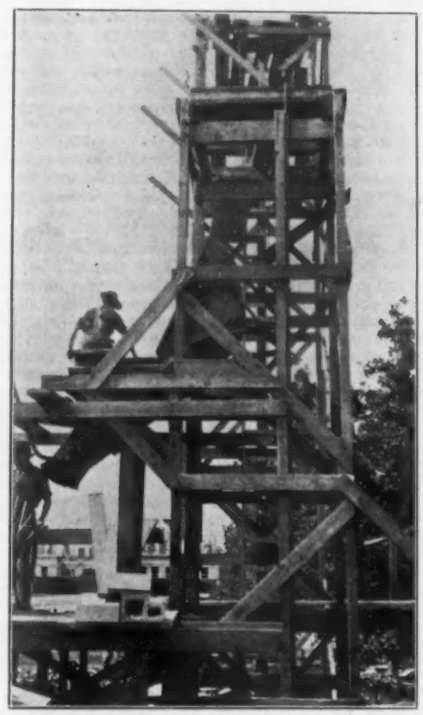
The National Concrete Manufacturing Co., Milwaukee, Wis., has been organized with $75,000.00 capital by Otto Gelhaar, J. P. Scherer, S. T. Walker and A. T. Rogers. They will manufacture concrete building stone and conduct a contracting business.

As Busy as a Bee

WASHINGTON, D. C., July 1.—Mr. Harmon S. Palmer says, "The Palmer-Browner Construction Co., of this city, are very busily engaged with constructing three houses of ten rooms each which they are building of our concrete block. Our business in the machinery line is very good also and we have been very much gratified with the recent decision in a number of our patent suits. Mr. J. A. Sanderson, of the Cement Machinery Co., Burlington, Iowa, was in this city last week. Up to this time he has been manufacturing the "Chicago Adjustable" machine. He is a hustler and has done a large amount of business in hollow block machines and is well qualified as a successful business man. He has joined our company, the Harmon S. Palmer Hollow Concrete Building Block Co. absorbing the assets of the Iowa concern so that Mr. Sanderson is now a co-worker with us."

A Word of Appreciation.

YORK, PENN., July 1.—Mr. John W. Eisenhardt, president of the National Cement Stone Co., manufacturers of building material and contractors says, "I find ROCK PRODUCTS quite interesting in our concrete block business for we get many valuable pointers in each issue to help us keep our product strictly first class. We have a very fine grade of sand here, fully 99 per cent pure silica, which enables us to make a block having the appearance in color and texture of Indiana



AUTOMATIC ELEVATING BUCKET IN OPERATION AT SYRACUSE UNIVERSITY.

limestone and is with our vapor steaming process and pneumatic tamping almost equal in density and toughness to granite. We think we have the best equipped plant in the United States and are meeting with some encouragement from the builders. We are confronted on every hand with material of poor quality made by other manufacturers of blocks and cement stone put together in all proportions and guessed at and not carefully figured out. This hurts those who do all they can to make only the very best quality in the line. Through the suggestions in your journal we have been enabled to bring our product up to the highest standard of quality and this we intend to maintain for although we have only been started a few months, our reputation is growing."

Mississippi Valley Burial Vault Co., Clinton, Iowa, has been organized with a capitalization of $10,000.00. The company will manufacture cement burial vaults which are placed in graves and hermetically sealed after the coffin and remains have been placed in them. J. E. Moran, Sheriff of Clinton County, is president of the company which will commence business at once.

Cement Brick.

Really an Old Idea.

Probably the first concrete commodity that was ever manufactured by the use of sand and cement was a cement brick that was produced in a hand machine more than twenty-five years ago, in many localities throughout the middle West. The machine employed consisted of the ordinary hand brick pallet which has been used from time immemorial in making old clay brick, and consisted of a wooden frame with partitions giving the exact size of the brick. Each pallet or mold box having from 6 to 10 molding compartments. This old time brick was made of sifted sand and Louisville natural cement, for Portland cement at that time had not generally come into the American market and was little known even to the dealers. The favorite formula was one part of cement to two parts sand, and it was mixed in small batches just as wet as it was possible to make it and still hold sharp corners to the bricks after the removal of the mold. Some of the makers of these brick troweled the exposed surface of the bricks while in the mold, giving that side a smoother or denser surface than the other five sides. The troweling also imparted a denser surface to this face of the brick and in laying the brick an effort was always made to lay the troweled surface out. A very creditable brick was made and thousands of them are still doing business in walls that were built at that time.

There was no lack of quality in these cement bricks but by the hand process, it was a very slow operation, requiring a great deal of labor, so that the product was too costly to compete with the common clay brick that was offered at that time, and outside of a few enthusiasts who continued the business for several years, it fell into disuse.

The advent of the present cement brick machines constitute the resumption of a business that that was well tried out many years ago. We have cheaper cement now and cheaper sand than they knew anything about in those days, and the ingenuity of the machinery producing the brick materially modifies the expense of the labor proposition. In a word the new ideas developed place the manufacturer of cement brick upon a practical and profitable basis as one of the new industries of this cement age. With all the education that has been developed with regard to the molding, tamping and curing of all kinds of cement commodities there is a guarantee to the properly qualified manufacturer of a good return for his time and his money.

Where Sand Abounds.

MINNEAPOLIS, MINN., July 13.—Cement brick which are made of sand and Portland cement are being used in the construction of the Minneapolis armory and have given entire satisfaction to the contractors, the brick masons, as well as the general public by their sightly appearance and durable quality. The Midway power station, located between this city and St. Paul, is using several millions of the same kind of brick. In this locality and in many other places of this country where a good quality of sand can be secured at very low cost, this kind of brick is now being introduced, displacing the use of the old common clay brick, which is always an expensive commodity where it has to be shipped any appreciable distance. The old clay brick has been considered an indispensable proposition in the construction of buildings, and for this reason the transportation charges have always been high. It has required no little ingenuity to arrive at a perfectly dependable substitute for clay brick in localities where the whole surface of the earth is practically a sand deposit. Only recently have local parties perfected a machine for the manufacture of this kind of building material. It is known as the Peerless brick machine and is said to be giving wonderfully profitable results to the parties who have secured it in order to enter the business of manufacturing cement and sand brick.

Interesting Comparative Tests.

BRUNSWICK, GA., July 20.—The Southern Cement Stone Co., manufacturers of and contractors in concrete construction and material, conducted in the early part of the season a public test of their cement brick which has been the means of securing for them a large number of orders and placing the cement brick above all others in that market. As it may be useful to others, it has been submitted for the use of the readers of ROCK PRODUCTS and the following is the report:

"In order to settle the question which has been raised as to the absorption qualities of cement brick as compared with clay bricks, we selected the very best grade of clay bricks procurable and submitted the same together with our cement bricks, to Messrs. Charles A. Betts, Constant Miller and Austin Holcomb, who kindly consented to act as a committee to make the test, and we submit the following report made by them:

BRUNSWICK, GA., March 22, 1906.—We, the undersigned, do hereby certify to the absorption test made by us with the following clay and cement whole bricks, and in the following manner:

No. 1. Chattanooga pressed brick, clay, weight before 82 ounces, weight after 89 ounces, absorption 7 ounces, or 8-22.41 per cent.

No. 2. S. & F. Co., New Jersey, clay brick, used in the construction of the Government building, custom house and post office, weight before 68 ounces, weight after 74 ounces, absorption 6 ounces, or 8-14.17 per cent.

No. 3. Rome pressed brick, clay, being used in the construction of the Methodist church, weight before 87 ounces, weight after 101 ounces, absorption 14 ounces or 16-8.87 per cent.

No. 4. Chattahoochee hard clay brick, weight before 68 ounces, weight after 79 ounces, absorption 11 ounces, or 16-3.17 per cent

No. 5. Red cement brick, weight before 77 ounces, weight after 80 ounces, absorption 3 ounces, or 3-69-77 per cent.

No. 6. Light gray cement brick, weight before 77 ounces, weight after 82 ounces, absorption 5 ounces or 6-38.77 per cent.

No. 7. Medium gray cement brick, weight before 78 ounces, weight after 82 ounces, absorption 4 ounces or 5-5.39 per cent.

No. 8. Dark gray cement brick, weight before 84 ounces, weight after 88 ounces, absorption 4 ounces, or 4-16.21 per cent.

No. 9. Buff cement brick, weight before 82 ounces, weight after 86 ounces absorption 4 ounces, or 4-36.41 per cent.

"The above bricks were placed in water entirely submerged, from yesterday afternoon at 4 o'clock until this morning at 9 o'clock, and shows without question that the cement bricks manufactured by the Southern Cement Stone Co. of this city, absorb less moisture than the clay bricks above, which are classed as first class quality clay bricks.

CHARLES A. BETTS,
CONSTANT MILLER,
AUSTIN HOLCOMB,
Committee.

"This report is full and complete, and should be sufficient to satisfy any one that cement bricks are the bricks to use, and particularly in this climate that is peculiarly moist."

A Busy Concern.

BENTON, ARK., July 1.—The Concrete Brick Manufacturing Co., of which Mr. B. F. Henry is the manager, recently established their plant here. The concern is filled up with orders. In fact they have all they can possibly do, for they are furnishing concrete brick for the new Methodist church at Rison and have taken on a big order for brick to go into the foundation of a big plant for the Owosso Manufacturing Co.

Supply Dealers Making Brick.

MANITOWOC, WIS., July 10.—The J. G. Johnson Co., dealers in building supplies, have bought the concrete brick and block plant which was established here a short time ago by W. C. Schlaeter & Co., and they announce that they will operate the plant as one of the departments of their business and will be in a position at all times to furnish concrete brick and concrete building blocks in quantities to suit the requirements of their customers.

The Carmoin Granolith Co., New Orleans, La., has been incorporated with $50,000.00 capital stock to manufacture concrete building stone.

The "Standard" Line of Cement Brick Machinery

SOUTH BEND, IND., July 20.—The South Bend Machine Manufacturing Co., have just issued a complete catalogue fully illustrated, which tells all about their Standard cement brick machines, Standard concrete mixers and Standard gasoline engines. This concern has been in business for about eight months and has perfected their brick machine, their mixer and their gasoline engine so that they are prepared to furnish the full equipment for a plant of any desired capacity out of their own shop and the testimonials which they have received from the large number of plants that have been equipped is that their machinery is giving perfect satisfaction in every instance, and the manufacturers making a satisfactory profit by the operation of them. In the recently issued catalogue, they give the approximate output of the various brick machines which they build deduced from actual practice. The No. 10 machine which makes ten brick at one operation will make 1,500 brick per day when run by one man; by employing two men it will turn out 3,500 brick. The No. 20 machine which makes twenty brick at a time and operated by two men turns out 4,000 perfect brick per day and three men can make 6,000 per day. The No. 40 machine which carries 40 brick in a single batch when operated by two men makes 4,000 brick per day, and when four men are employed 8,000 brick are finished, and with six men to handle the material, the product and the machine 12,000 brick per day regularly is the record.

A careful estimate of the cost of production, based upon the calculations, fifty different plants by the principle of averaging shows that they can be made from $3.25 to $5.50 per thousand, according to the varying costs of labor and material in different localities. The simplicity of the brick machine is its first recommendation because it requires no specially skilled labor to operate it. It is simply a question of tamping the concrete properly into the mold and then striking off the full mold and again tamping for the final surface and then withdrawing the partitions, leaving the perfectly finished brick upon the pallet which can then be carried away from the machine and seasoned in the proper way to make them useful as a building material of the highest grade. As to rapidity, it is easy with a little practice to make twenty complete brick in thirty seconds.

In addition to the ordinary brick produced on their machine this company offers the plan whereby they can be made in any color, or if desired, the face of a brick can be veneered one-quarter inch with the richer material either colored or the natural color, the result being a brick of very high grade that readily commands double the price, at least, of ordinary clay brick. Cement brick made by such processes are equal to pressed brick in appearance and quality and the expense of the facing is small.

The first cost of a plant for the manufacture of cement brick is much lower than that of any other business where a similar amount of profitable business is possible.

Running the Factory Steadily.

DETROIT, MICH., July 14.—The Ideal Pressed Brick Co. say: "We are using a No. 40 brick press built by the South Bend Machine Manufacturing Co., which is giving the very best results in the manufacture of cement brick, both in regard to the quality of brick turned out and the amount of the output. We have been running steadily with three men on the machine and are turning out 6,000 brick per day, working 9½ hours. We have a large supply of wooden pallets and have used some of them several times and do not find much trouble in their warping. In our curing operation we wet brick, pallet and all, but have found no trouble so far."

Cement Sewer Pipe.

JACKSON, MICH., July 10.—The Sanitary Reinforced Cement Sewer Pipe Co., whose principal office of doing business and plant for the manufacture of sewer pipe reinforced with an iron wire fabric, has been incorporated with a capital stock of $50,000.00. The promoters of this company are said to be experienced concrete men who have carefully estimated all the features of the business and with a prospect for business based upon estimated cost they can see justifiable returns for establishing a large plant. The incorporators are Stephen H. Carroll, Hugh J. Keenan, Edmund J. Tobin and Jos. Weinhold.

Sand-Lime Brick

Ready Sale for all They Can Make.

The reports which come from the plants where sand-lime brick is manufactured are very meagre indeed. The principal reason being that they are all busy making brick and the report that they can sell all the brick they can possibly make should certainly be considered encouraging. A year or two ago, the architect and contractor stood aloof and everybody who had a building on hand seemed to be waiting for some one else to be the first to use the new material in this country, in spite of the fact that the bricks are being made almost upon the identical basis that they have been so successfully manufactured in Germany for years. This aversion on the part of the architect and contractor seems to have entirely disappeared for there is not a plant in the country today that is not running its machinery to the limit of capacity. It is only a lack of the proper study of the local details that keeps any of them from making a success of the business. The intelligence disseminated by the association has certainly had a wonderful effect in placing the business upon its present gratifying basis.

Making Colored Brick.

WINNIPEG, MAN., July 12.—The Manitoba Pressed Brick Co., who have so successfully introduced the sand-lime brick in this locality are making an addition to the light colored gray brick by providing a nice buff and a red brick which promises to add to the popularity of their line for faced brick purposes, because it gives the advantage of using color in the enhancement of decorative features.

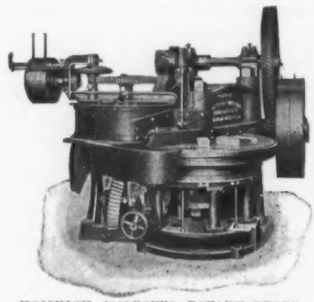
Some Nice Work at Memphis.

MEMPHIS, TENN., July 18.—The Memphis Granite Brick Co. who have had the same feature of expensive experimentation that so many of the sand-lime brick plants have been annoyed with at the start have at last got their plant to running smoothly and they are making a very excellent face brick that is being used very effectively by several of the local architects. A number of very attractive residences have been built entirely of the new white brick, and quite a number of other things have been veneered with them for one story. In several instances the contractors have used the sand-lime brick for fire backs in building fire places and for chimney linings, claiming that the preponderance of sand in the structure of the material especially qualifies them for such usage and it provides a place for working up the few discolored seconds which can not be used to advantage in the outside facing of the walls. Some of the supply dealers in Memphis carry these brick in stock alongside of other face brick and they are rapidly developing a steady call for the tasty and artistic white brick.

A representative of ROCK PRODUCTS who was recently in Memphis failed to see the presiding genius of this plant, Mr. Bolton Smith, but it was easy to see his trail in the building district of the city.

The Largest Order on Record.

WILMINGTON, DEL., July 17.—The largest award for brick that was ever made in Delaware was that recently effected when the Manufacturers Contracting Co. contracted with the Chas. Warner Co. for the delivery of a million and a half of their diamond stone brick to be used in the



KOMNICK IMPROVED ROTARY PRESS.

new DuPont building at Tenth and Market Sts. These bricks which are to be of the natural gray color, will be utilized on all parts of the big structure with the exception of the front. The company having the contract for this building made numerous tests of sample bricks and the Warner Co. had competitors from Philadelphia, Reading and Wilmington. Because of the above contract and other work on hand the Warner Diamond stone brick plant will be kept unusually busy for several months, but Mr. H. O. Duerr, the general manager, says there will be no difficulty in keeping up the delivery of bricks steadily as fast as the brick layers can use them.

Locating a Plant in California.

SANTA CRUZ, CAL., July 15.—Jerry Deenen of Deenen Bros., one of the largest firms of builders in San Francisco who will rebuild the Palace Hotel is looking over the sand deposits located about this city for the purpose of selecting a site for the manufacture of sand-lime brick.

SUCCESSFULLY LAUNCHED.

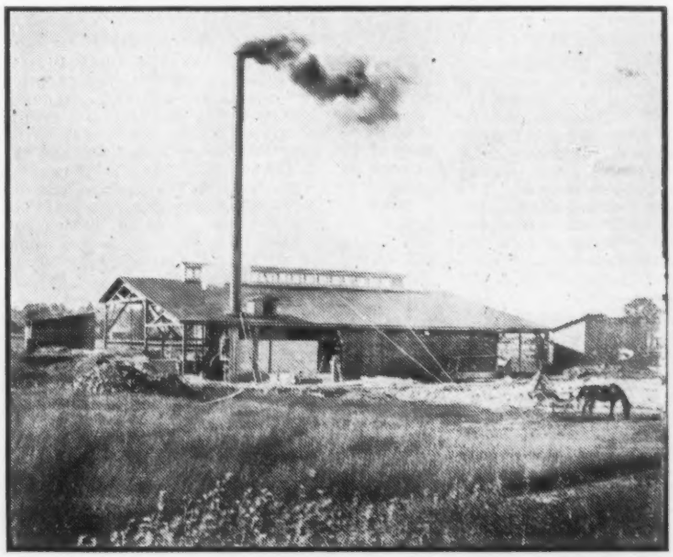
New Canadian Plant Begins Business Under Very Auspicious Circumstances.

PETERBOROUGH, CANADA, July 9.—The Peterborough Sandstone Brick Co. has completed its plant and commenced operations upon a basis of 20,000 brick a day. The finished brick is of a light gray color and very uniform in appearance when laid together, and besides this they have met with the commendation of the Toronto city architects who have made a complete test of the bricks and furnished the company with the following certificate which is a guarantee of quality that means a great deal to the company who are offering their product upon the market for building material. This report, coming from the authoritative body of architects of the city of Toronto undoubtedly means that some of them at least will at once begin to specify sandstone brick in the work which they have to build.

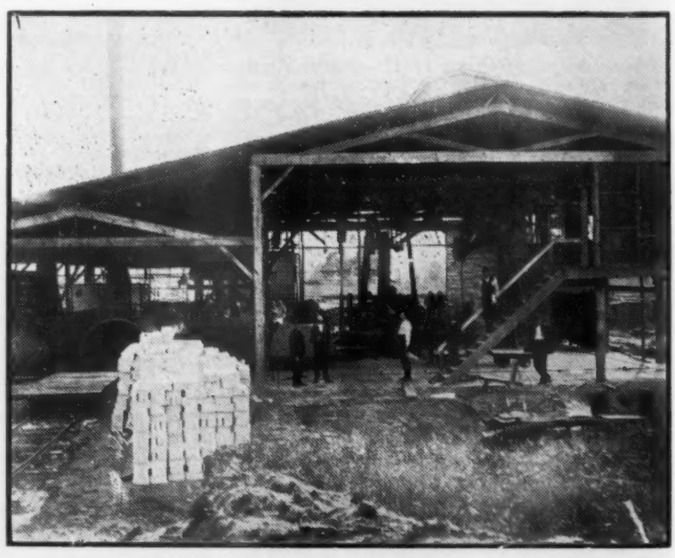
Toronto City Architects Report on the Quality of Sand-Lime Bricks.

"The bricks tested showed unexpected strength and resistive powers. It only crumbled after 120,000 pounds had been applied to a single brick. The highest pressure on any other brick tested at the School of Practical Science was 98,000 pounds. The new brick, too, withstood half an hour in 4,000 degrees of heat. The building regulations require brick able to withstand a pressure of six tons to the foot. The sand-lime brick have been tested to a pressure of over 200 tons to the square foot."

The company has been singularly successful in securing property upon which there is a supply of high grade sand for the purpose of making the brick. It is practically an entirely local concern composed of the following officers: J. J. English, president, Hastings, Ont.; J. J. Hartley, of Peterborough, who is well known and successful contractor, vice president, and the secretary. Mr. E. S. Clarry, of Peterborough. The secretary asserts that the company has received since the plant was put in operation a large number of orders which fully justifies the faith they have in sand-lime brick by the establishment of the plant. The main factory is 90x70 feet in size, and all the machinery and equipment of every description was installed by the American Sandstone Brick Machinery Co., Saginaw, Mich., and includes one of their Komnick rotary brick presses, which is the latest improvement that has been offered in this especial line of manufacture. The sandstone brick is more widely known as the sand-lime brick, which name indicates the exact nature of the material from which it is made. It represents the most advanced feature of brick making and far outclasses anything that has been made of clay and burned in a kiln as a face brick proposition. Its growing popularity



GENERAL VIEW.



NEARER VIEW SHOWING THE OPERATION.

PLANT OF THE PETERBOROUGH SANDSTONE BRICK CO., PETERBOROUGH, ONTARIO.

is well deserved, for it is a luxury which adds beauty to any building where it is employed at very little or no extra cost. Undoubtedly the builders of this vicinity will hereafter consider the sandstone brick as a leading feature when they are preparing their specifications."

The factory building as it stands now is simply in its skeleton shape; that is, it merely consists of a roof with the proper structural supports and this will be bricked in with curtain walls made of the product of the plant before cold weather sets in. In a word, it may be said that the prospects of the company are excellent, and that it is already rapidly developing into one of Peterborough's important industries. The company is incorporated for $50,000.00 and Mr. M. F. Sears, of Saginaw, Mich., has been secured for the superintendent of the plant. He is well qualified for the position, having acquainted himself with every detail of the business at the factory where the machinery of the plant is built.

The first house to be completed is that of Mr. Herbert C. McCannon, a handsome and moderate sized house at the corner of Dalhousie and Reid Street. The contract for the brickwork is in the hands of Mr. James Rose. Sand-lime bricks, manufactured by the Peterborough Sandstone Brick Co., are being used in the erection of the building. Quite a number of houses in the south end are using this new building material.

Popular with Builders and Architects.

JANESVILLE, WIS., July 20.—The Janesville Granite Brick Co., are putting out their usual amount of work. They have just installed a new condensing process by which the condensed steam is pumped back into the boiler as water. The concern keeps up to the times in machinery used in this kind of a plant and their work is up to any of its kind. They are shipping their granite brick daily to the new state normal school which is being erected at Plattesville, and also to other towns in the vicinity. As a face brick proposition as well as for the entire construction of buildings, the granite bricks made by this concern are rapidly gaining in popularity, both with the builders and the architects.

Gaining in Popularity.

CHATTANOOGA, TENN., July 12.—Mr. J. Lee Hale, contractor and builder, who makes a specialty of cement stone buildings says, "The concrete business in this locality is rapidly gaining in popularity. The concrete block business especially is looking up. There are more houses being constructed of concrete blocks this year than in all previous years put together and what is more we are doing a class of work that is giving entire satisfaction to the customer which means a wider range for the usefulness of cement stone in the immediate future. I contemplate putting in a crusher for the purpose of preparing my concrete aggregate on the job."

Some Big Contracts.

HAWTHORNE, ILL., July 21.—The Rudolph S. Blome Co., Chicago, Ill., are building at the Hawthorne plant of the Western Electric Co. one of the largest concrete coal pits ever constructed. The contract price is $30,000.00. They are also building a large concrete gas holder foundation at the same plant and besides this about 3,000 square yards of granitoid concrete block pavement with curbing, retaining walls, etc.

Very Heavy Shipments of Cement.

SAN FRANCISCO, CAL., July 16, 1906.—As a cement market, the eyes of the world are now centered on San Francisco. It is computed that when the new buildings that will be constructed of re-inforced concrete get under way, San Francisco can take all the cement that can be shipped there, and cry for more. The railroads report that shipments are moving in quite rapidly. From the markets in the East, in Colorado and Kansas, and even from the mills within the borders of the State, cars of cement are on the way to San Francisco. In the cities of the Old World, there is no small stir, and barrels of cement are being loaded on vessels in Germany and Northern Europe and headed in this direction.

The immediate consumption of cement will not be great, as the buildings that will require most of it are not yet under actual way; but even now there is a large amount of it used, and the demand is on the steady increase. The shipments from foreign ports will not reach this city for some time, and until they do the demand will have to be met with shipments from the East.

Orders have been placed in the Southern Pacific and the Santa Fe railroads are handling large shipments of cement, and expect in the course of the next month that the consignments of the cement from the East will be greatly augmented.

The supply of cement in this country is extremely limited, and it is calculated that a cement plant would be worth now as much as a gold mine. Prospectors are abroad in the State trying to locate cement deposits, and capitalists from the East are on the ground looking into the situation. The cement works in the East have all the orders they can handle in that part of the country, and it is extremely doubtful if much cement can be brought to this city from other points in the United States. It is confidently hoped, however, that enough can be secured to tide over until the ships with foreign cargoes shall have arrived.

One firm in San Francisco has recently ordered 10,000 barrels from Europe, which it is said will be entirely used within a month. Another firm has offered to take all the cement that can be shipped to San Francisco. It is evident that there will be a great premium on cement, and every effort is being made by the manufacturers in California to increase the capacity of their respective plants in order to meet the growing demands for that building material.

Brick Made of Waste Slate.

Instancing one of the new uses for waste slate, there is made in Germany a building block which is impervious to water and has very durable qualities. The process of manufacture consists in simply calcining the slate, grinding the same into powder, then mixing with a binder, the exact composition of which is one of the secrets of the manufacture, and pressing into bricks. The finished brick is of pink color, which is quite pleasing to the eye. Possibly this industry might be profitably exploited by some of our American slate producers.

A Mammoth Concrete Railroad Depot.

LOS ANGELES, CAL., July 3.—Concrete, as a structural material, is now meeting with great favor with the western (Pacific coast) railroads, especially with the Southern Pacific and Santa Fe systems. During the past few years a number of concrete passenger depots have been constructed in different parts of California by these two companies, and others are still projected.

Already the Santa Fe has commenced the construction of a mammoth freight depot at Los Angeles, Cal. This building is to be constructed entirely of reinforced concrete and will be two stories high. Beyond doubt this will be the largest freight depot of any kind west of the Rocky mountains. Its total length is 1,320 feet and width 95 feet. Contract price $225,000.00.

Very recently the contract for the erection of this huge depot was awarded Mr. Carl Leonardt, a prominent contractor of Southern California. The building will be located along Los Angeles Avenue and will extend for one fourth of a mile. While contractor Leonardt will actually do the work, the construction will be under the personal direction of General Manager Wells, and Acting Chief Engineer Morse, both of the Santa Fe company.

The building will be entirely of reinforced concrete, with clean spans between columns of 60 feet. The roof will be of red clay tiling. A prominent feature of this immense depot will be the speed and ease with which it may be changed from a closed to an open building. By the simple swinging to and fro of two powerful levers, one half a mile of pivoted transom windows on each side of the building can be opened or closed at will.

One half of the lower floor will be used for inbound freight and the other half for outbound. The second story will contain a great many offices.

None but the very best quality of cement will be used. Every sack and barrel will be tested by an expert and will be discarded if it fails to come up to the required standard.

In every respect the equipment of this new and mammoth freight depot will be complete. There will be a very complete system of intercommunicating telephones and pneumatic tubes. The building will be equipped with watchman's time detector system, and an automatic sprinkler system, and air vacuum suction system, etc., and will be heated by steam and lighted by electricity.

Work is being crowded forward with all haste but it is expected a year will be required to complete this huge structure.

All the plans and specifications were prepared by Harrison Albright, a Los Angeles architect.

SALT ITEMS.

Fate of the Salt City.

MANISTEE, MICH., July 15.—There are indications that Manistee will some day drop into the immense caverns which are made by the pumping out of brine by the big salt plants. The city is now settling more than a foot each year in some portions, in others at the rate of but a few inches. Records of the water department show that this subsidence has been going on for years, and frequent breaking of water mains is the result of the process. For many years brine has been pumped out of the salt plants at a rate sufficient to produce thousands of barrels of salt daily. This must have made a great pit below, and salt engineers claim that occasionally the roof of this cavern, 2,000 feet below the water level at the surface, caves in, stopping up their wells.

A New Company in Mexico.

A new salt company, the Salinas of Mexico, Ltd., has been registered in London for the purpose of acquiring and working the brine deposits existing below the lagoons along the high plateaux of Mexico north from San Luis Potosi toward Palomas. The company, through the Hon. Chandos S. Stanhope, is negotiating the purchase of the properties now being worked by Mr. Luis de Perrazu, known as Salinas de Penon Blanco, consisting of sixteen lagoons and parts of two others. Six of these lagoons have been worked, the others being held in reserve. The present owner lives in Paris.

Unique Salt Operations.

One of the sights of the Great Salt Lake of Utah, developed by the progress of scientific industry is the system of immense salt making ponds on the shore of the lakes. At Saltair the lake water is pumped into a great settling basin, where the impurities fall to the bottom and, containing much iron, form a reddish deposit. From this basin the water is drawn off into "harvesting ponds" averaging 90,000 square yards in area and six inches in depth. The ponds are kept supplied with water, as the evaporation goes on from May to September, when the salt harvest begins. The water having disappeared, a dazzling layer of salt two or three inches thick is found covering the bottom of the ponds, which is broken up with plows before being conveyed to the mills, where the final crushing and winnowing are done.

In general the salt marshes of the Kongo region represents a kind of pocket or rift in the soil. They are to be found in considerable numbers in the district of Sambalt, and there are also many of these marshes on the left bank of the river Lufubu. The walls of the rift show first a layer of blackish clay mixed with sand and containing numerous quartz and silex pebbles or more exceptionally black and white shells, fragments of oyster and mussel. Then comes a layer of stratified and gray blue schist. The soil of the depression also contains a schist as the greater constituent and is covered by a layer of sandy clay. In order to collect the salt the natives dig a funnel shaped hole from six to ten feet deep. The cavity soon fills up with a warm and clear water, which is strongly charged with salt. It comes up with considerable pressure, and the liquid seems to boil. The salt is partly precipitated to the bottom of the cavity and mixes with the soil to form a blackish mud. The latter is washed out with hot water to extract the salt, which is then crystallized from the solution. The product which is thus obtained is of a salty gray color, and its taste is more alkaline than that of European salt.

The Rock-Glen Salt Co. has been organized at Rock Glen, N. Y., to mine and manufacture salt. The capital stock is $100,000.00. The incorporators are: W. S. Gounlock, C. A. Van Arsdale, B. B. Conable, J. E. Slaught, Warsaw, N. Y., T. I. Campbell, Silver Springs, N. Y.

Roofing.

The National Association of Master Composition Roofers of U. S. A.

C. A. Monks.....President.
P. LeGoulion, Pittsburg, Pa.....First Vice-President
H. C. Smither, Indianapolis, Ind.....Second Vice-President
W. K. Thomas, Chicago Ill.....Secretary and Treasurer

DIRECTORS.

E. S. Bortel, Philadelphia, Pa.
C. B. Jameson, Buffalo, N. Y.
T. S. Harkness, Cincinnati, Ohio.

Official Organ, ROCK PRODUCTS.

THE BUFFALO CONVENTION.

National Association of Master Composition Roofers of the United States Holds an Interesting Meeting.

ENTHUSIASM IS THE WATCHWORD.

The fifteenth annual convention of the National Association of Master Composition Roofers of the United States was held at Buffalo, N. Y., on Monday, Tuesday and Wednesday, July 16, 17, 18. The magnificent Hotel Lafayette was selected as headquarters, although the meetings of the association were held in the Builders' Exchange, which was kindly tendered for the purpose.

The first session was called to order promptly at 10 o'clock with President Emil Machwirth, of Buffalo, presiding. After complimenting the members on their presence, many having come quite a distance to attend the convention, he congratulated the association upon its growth and influence, and said that he hoped the present meeting would be productive of much good, and that every man would feel when he got back home that his trip was not in vain.

He said he would like to have seen more of the members present, but realized that with many it was practically impossible to leave their business at this time of the year owing to the immense amount of building going on in all sections of the country. He said that the general prosperity of the country at large had benefited the roofer as well as everyone connected with building operations in any way.

Secretary W. K. Thomas, of Chicago, was next called upon to call the roll, after which the minutes of the previous session were read and approved. The next business was the reports of officers.

Secretary Thomas read his report which was listened to with considerable interest by all those present, as it contained many very good points.

THE SECRETARY'S REPORT.

Mr. President and Gentlemen: It seems to me that before we can expect to have the National Association reach that degree of importance that we should reasonably hope for, we should adopt some plan that will stimulate the formation of more local organizations, produce a greater interest at the foundation of our association, allowing these local bodies to adopt such rules and regulations as will best suit their own localities. Such organizations could be admitted to membership in the national body on fees graded on a per capita scale of the local body, and at the same time make provision for enrollment of the isolated roofers who can not conveniently affiliate with an organization, that they will find it to their interest to join the national body, with dues a little in excess of those that come in as a local organization.

To be content to remain outside these organizations and yet receive the benefits that are secured by the efforts of others is a species of selfishness and littleness that is unworthy any firm who is striving for success along mercantile lines. Roofers must pull together and pull hard on all matters, that are to the interest of the trade, and the only way to accomplish desired results is to join these associations and attend the conventions. And here, I would compliment our official organ, ROCK PRODUCTS, of Louisville, Ky., for their untiring efforts to have the master roofers come to this convention in such numbers that their efforts would result in the upbuilding of this association. The benefits are so plain to the desirable roofers of this country that local organizations should spring up all over the land and reap the reward that is theirs almost for the asking, if coupled with a little energy and a good lot of old fashioned honesty. Local organizations should send to the national conventions their ablest representatives.

We are confronted on all sides by complaints of poor material and the complainants are called kickers ("yes, you are the only kickers we have got on these goods," an old stock saying that has been worn threadbare for many years), but still it is handed out to us as fresh as if it came out of the mint to-day. What are you going to do about it if you have not got a strong organization? This is another strong appeal to get together for mutual protection; and now is the time. Another year of procrastination may be too late.

C. A. MONKS, THE NEWLY ELECTED PRESIDENT OF THE ROOFERS' ASSOCIATION, LOUISVILLE, KY.

Quite an important matter also is the roofers' guarantee, and the tendency is toward long terms, generally it is five, seven or ten years, and in some places no limit. My opinion is that five years is long enough. In the city of Chicago five years has been the customary limit, except where special roofs were constructed with extra material. We have been educating the people so that after the five year guarantee had expired, the roof should be recoated so that it would keep the foundation in good condition for several years, when it could again be recoated when it showed signs of decay. For recoating work the guarantee was for two years, then it grew to three years, and lately the guarantee has been given in some cases for five years. In many cases a guarantee from any person or firm is all that is asked for, without any further inquiry as to the responsibility or willingness of the maker to make it good.

Another element of discord, which often ends with disastrous results among master roofers, and which perhaps is present in other lines of business in a greater or less degree, is the want of confidence in each other, the casting aside, often with very little concern, of verbal agreements and the common courtesies that members of the trade are justly entitled to. By our association in local and national organizations we seek to remedy these conditions. Closer relations with each other are only obtained through these meetings, and the exchanging of ideas are the stepping stones upon which we rise to a higher level in our business, where we can do away with many jealousies that are now pulling down instead of building up better conditions of our trade.

The fire proof qualities of the composition roof have been questioned in some localities, and the most notable case was in the city of Sacramento, Cal., where the composition roof was prohibited entirely by the inspector of the building department or fire marshall. One of our members in San Francisco, wrote me the particulars in the case and I took the matter up with some of the leading roofers and manufacturers, and gave them the results of the investigations of this association into the fire proof qualities of the composition roof, with the opionions of fire marshall chiefs, board of underwriters and owners of buildings in different cities of the United States, with the result that the embargo was removed from the composition roof in Sacramento. This action was a benefit of considerable importance to our California member, as he did a great amount of work there. But the other roofers in that city do not likely appreciate the work of the national association.

Referring to casuality or liability insurance, which is quite an important feature in many places, is one which has never been taken up and discussed in this association that I recall. In our local organization at Chicago we have gone pretty fully into the matter and have very materially reduced the rates, which we could not do until we took it up in our association and worked together. A local organization has the advantage of carrying among themselves a mutual plan where the profits are entirely within their association, or they can make reasonable rates with an indemnity company on the basis of a combined pay roll, and the result is that better rates have been made on an individual pay roll by reason of the power of this organization.

This argument ought not to escape the notice of members that have or could form a home organization. Its advantages are also great in holding together its members and the assistance it can render to them in time of danger.

Our national organization has accomplished many good things for its members, notwithstanding the fact that it has not had the support from the great mass of roofers that it should have, to make it more effective. We have a few earnest workers that have done a great deal of good for the association and have devoted a great deal of time and money to the work, but we have not enough of them to carry to a successful issue the work we have started out to do, unless we can raise a greater amount of interest and enthusiasm our labors are futile.

I hope the members of this association will not underestimate the situation.

After the reading of the report a motion was made that the report be received and filed and such portions which required action be adopted.

The standing committees had no reports to make at this time and communications were next read from several members of the association regretting their inability to be present. Several letters contained some good suggestions which were referred to committees.

The secretary was next called upon to read the list of applications for membership in the association. The following were voted upon and declared unanimously elected: Dayton Felt Roofing Co., Dayton, Ohio; Nichols Roofing Co., Lincoln, Neb.; Witt & Brown, Cincinnati, Ohio, and Singleton, Ruffner & Co., Cincinnati.

The secretary then read letters inviting the association to meet in the following cities: Denver, Chicago, Put-in-Bay, Atlantic City, Niagara Falls, Elmira, N. Y., Norfolk, Va. The latter place is near Jamestown where the exposition will be held next year.

President Machwirth referred the communications to a special committee to report at a later meeting.

A motion to adjourn was next put and carried, and the association adjourned to meet again the following morning at 10:30.

Mr. Emil Machwirth invited the association to visit his immense establishment, which they all did.

The firm of Machwirth Bros. Co. enjoys a national reputation, and rightly so, as they are among the largest manufacturers of galvanized iron cornice, skylights and window caps, and are also iron tile, gravel, asphalt, slate and tile roofers.

They do work from Maine to California and no job is too big for them to handle. They have one of the most modern establishments to be found anywhere, their plant being one-half a square each way and four stories in height. They employ about 300 men in the various branches, and the trip through the factory was a revelation and proved highly instructive.

In the afternoon the entire party, as guests of the local committee, headed by Mr. Emil Machwirth and Mr. C. B. Jameson, made a tour of the city, and its beautiful parks in automobiles. Among the ladies in the party were: Mrs. Henry C. Smithers and niece, Miss Virginia Osgood, of Indianapolis, Ind., and Mrs. J. H. Hahn, of Birmingham, Ala.

About 22 miles of magnificent boulevards and parkways were traversed and the party returned to the hotel for supper.

At night the whole party were taken to Shea's Theater where a fine vaudeville show was enjoyed.

TUESDAY'S SESSION.

Promptly at 10:30 o'clock President Machwirth called the convention to order and they soon got down to business. The minutes of the previous session were read and approved, and a suggestion made by the ROCK PRODUCTS' representative that the president appoint district vice presidents was discussed.

Mr. E. S. Bortel, of Philadelphia, presented the matter to the association in the shape of a motion which was adopted without a dissenting vote. The incoming president will appoint vice presidents for the various sections of the country, whose duty it shall be to organize state associations, they in turn to send delegates to the national body and to become a part of the parent body eventually, as a whole.

A discussion of the National M. C. R. brand of roofing felt was next in order.

Letters from members in different sections of the country were read and several of those present made short talks on the subject.

Many of the matters which occupied the attention of the association at this session could not be given out for publication.

The meeting finally adjourned until 2:30 p. m. when the association went into executive session.

Election of Officers.

After this followed the election of officers which resulted as follows: President, C. A. Monks, of Louisville; first vice president, P. Le Goullon, of Pittsburg; second vice president, H. C. Smithers, of Indianapolis; secretary and treasurer, W. K. Thomas, of Chicago. Directors, E. S. Bortel, of Philadelphia, C. B. Jameson, of Buffalo, and T. S. Harkness, of Cincinnati.

A telegram was read from Mr. T. S. Harkness, of Cincinnati, regretting his inability to be present at the meeting and wishing them success. His excuse was that he had just been married and was off on his honeymoon.

The association sent a telegram of congratulation to the happy bridegroom, wishing him much joy in his venture on the sea of matrimony and wishing him many happy returns of the day; also excusing him, owing to the importance of his other duties.

The committee having the date and place of meeting in charge reported that they recommended Norfolk, Va., as a place for holding the next convention, owing to the fact that the exposition would be held at Jamestown which would give the delegates an opportunity of visiting that place. The exposition will name the day the association meets in their honor. This date will be selected later and was left in the hands of the executive committee with full power to act. The consensus of opinion was that the meeting should be held some time in September.

Resolutions of thanks were adopted thanking the local committee, and especially Mr. E. Machwirth and Mr. C. B. Jameson, for the many courteses extended to the association, and for the dinners, auto rides, theatre parties, Niagara Falls trip and other entertainments.

After the installation of officers Mr. C. A. Monks made an impromptu address to the association in which he thanked them for the high honor conferred upon him and assured them that he would use every effort in his power to promote the welfare and the best interests of the association.

It might be well to state here that no better selection for the office could have been made than by selecting Mr. Monks. He is full of enthusiasm and energy, a successful business man and a tower of strength to any organization. He has many new ideas which he will work out during the coming year, which promises to be the most successful in the history of the organization.

There is much to be accomplished by this association and Mr. Monks will continue the work already outlined and inaugurate some new features which can not fail to be productive of good results.

He was heartily congratulated by every member of the association present and they all assured him of their active and hearty support.

Secretary and treasurer, W. K. Thomas, came in for his share of the good words, and he was complimented upon the able manner in which he had performed the arduous duties of his office.

The association is in a prosperous condition financially, and special efforts will be made during the ensuing year to get new members.

Two new members of the association elected at this convention from Buffalo were present at the last sessions.

WEDNESDAY SESSION.

The executive committee held a short session in the hotel on the morning, after which the entire party went to Niagara Falls as guests of the local committee. The whole day was spent in viewing this grand natural wonder and trips were made to the Canadian side and through the gorge. The party returned to Buffalo late in the evening full of the praises of Buffalo, and voting that, taking the meeting as a whole it was the most successful and enjoyable in the history of the organization.

A SNAP-SHOT OF SOME OF THE ROOFING DELEGATES.

NOTES OF THE MEETING.

The ladies of the party all enjoyed themselves to the fullest extent. More of the members should bring their families to these meetings. They not only grace the occasion but add to the pleasure of everybody.

The youngest lady member of the party was Miss Virginia Osgood, of Indianapolis, whose singing and playing was much enjoyed. Miss Osgood has a beautiful contralto voice of remarkable sweetness and purity and her rendition of several popular songs accompanying herself on the piano was a treat which was enjoyed by all.

Mr. J. Wm. Moore, of the J. N. Moore Co., of Providence, R. I., was present. He says that the past season has been a very prosperous one with him and he looks forward to a continuation of the same good business.

He invited the members of the association to visit him at his home and promised them a good old fashioned clam bake. Several members of the association availed themselves of his kind offer.

Mr. P. LeGoullon, of Pittsburg, was on hand. He is one of the old standbys of the association and can always be depended upon. He is among the most successful roofers in the country and has a large business. He always takes a deep interest in the association work and is popular with the members.

Mr. P. J. Keyes, representing the Dayton Felt Roofing Co., of Dayton, Ohio, says that he has had a very prosperous season.

Dayton is one of the growing cities of the country and there has been considerable building going on. Mr. Keyes seldom misses a meeting and is always prominent in all discussions.

The Chatfield & Woods Co., of Cincinnati, Ohio, was represented by Mr. C. J. Berman, who has charge of the roofing department, and Mr. Chester S. Merrick, the manager of the stationery department.

Mr. C. A. Monks, the newly elected president, was among those who made the annual meeting an occasion for an outing. He left for the East where he expects to spend the rest of the month.

Mr. T. F. Smithers, the well known Indianapolis roofer, also left for the East at the conclusion of the meeting. He says, however, that he will only make a short stay as he has to hurry back to his business.

Mr. J. H. Hahn, representing the George F. Wheelock Co., of Birmingham, Ala., enjoyed the distinction of being the member to come from the longest distance to the convention. Mr. Hahn was accompanied by his wife and after the meeting was over they continued their trip east.

Mr. W. N. McIlravy, representing the Barret Manufacturing Co., of New York, renewed old acquaintances. Mr. McIlravy is convalescent after a long period of illness, although he looks as if he had never been sick a day in his life. He is rapidly recovering his strength and is getting back into harness again.

Mr. Emil Machwirth is certainly the prince of entertainers. The smoker Tuesday evening was a big hit. Champagne and wit flowed together and the evening was one long to be remembered. Every member of the association was present on this occasion and they all seemed glad to be there.

The gathering was held in Mr. Machwirth's large offices and was altogether informal.

Mr. E. S. Bortel, of Philadelphia, kindly acted as assistant secretary. Mr. Bortel is one of the most prominent roofers in Philadelphia and said that he had had a splendid season, and that he really had nothing to complain of unless it was a scarcity of materials in some lines.

Mr. Bortel is the wheel horse of the association and whenever any knotty question arises he is looked to for a solution of the problem. He will revise the rules and regulations of the association and compile a new set which will be ready for distribution some time in the fall.

Mr. Henry C. Smithers, of Indianapolis, was accompanied by his wife and niece, Miss Virginia Osgood. After the conclusion of the meeting they left on the lake steamer for Detroit and other Michigan resorts. Mr. Smithers reported that business with him had been very good during the past season and that he has several big jobs on hand now which will keep him busy the balance of the summer.

Mr. C. B. Jameson, who was prominent on the local entertainment committee, is one of the most successful composition roofers in Buffalo. He placed his fine touring car at the disposal of the delegates.

Mr. Walter B. Harris, representing the Warren Chemical and Manufacturing Co., of New York, was present. Mr. Harris is very popular among the members of the association, and no meeting would be quite complete without him. He is well known to all the trade.

Some Nice Contracts.

MOBILE, ALA., July 14.—The New Orleans Roofing and Metal Works, who have recently opened a branch house in this city, closed contract recently through the manager of their roofing department (Mr. J. C. Simpson), with the Atlantic Compress Co. for their presses in Montgomery, aggregating some 250,000 square feet. This is one of the largest contracts for roofing ever let in this section of the country. Since opening the branch they have secured several other large contracts, among which is the new plant of the New Orleans Naval Stores Co., at Gulfport, Miss., amounting to 150,000 square feet.

Satisfactory Concrete Shingle Demonstration.

FRANKFORT, KY., July 11.—A gathering of concrete and roofing operators was held here yesterday for the purpose of making practical demonstrations of a concrete roofing machine. The meeting was held at the suggestion of Mr. E. M. Newton, traveling representative of the Leusch Manufacturing Co., of Waterloo, Ia., makers of the Leusch concrete shingle machines, who desired to prove its adaptability and superiority, which was done to the satisfaction of all present.

As an illustration of its simplicity, Mr. Jonts, foreman of the machine company, who was giving the demonstration, called in a negro laborer, who was passing by at the time, and within twenty minutes, with a few instructions, he was turning out the shingles just as rapidly and perfectly as an experienced hand could have done. Tests were next made as to the water proof qualities of the shingles. Placed at an angle of from 30 to 45 degrees, these shingles shed the water perfectly, although when placed flat the reesults were not so satisfactory. This will be overcome in the near future.

Every one present expressed themselves as perfectly satisfied, among whom was J. S. Darnell, of this city, who has just purchased several of the machines and will soon be turning out the shingles in large quantities, in addition to his other operations. He will employ five men at present, increasing the number as the business demands it.

Large Organization Erecting New Plant.

PEORIA, ILL., July 12.—The Barrett Manufacturing Co., which is engaged in the erection of a mammoth plant in the south end of the city, has recently increased its capital stock from $500,000.00 to $750,000.00 in order to properly care for the rapidly growing business. The Barrett Co. several years ago purchased a number of acres of ground in the south end of the city, and without any inducements being offered them announced that they proposed the removal of their big roofing paper company to this city from Beloit, Wis., where they have been engaged in business for a long series of years.

Their business is the largest in the country, and their Peoria plant will be far in excess of any roofing paper plant ever erected in this country. The contract for the buildings was some months ago awarded to Val Jobst & Sons, of this city, who are now engaged in the construction of nine immense buildings, which will be necessary to properly house their rapidly growing business.

The Barrett Manufacturing Co. practically controls the output of the roofing paper of the country. Their trade extends from the Atlantic to the Pacific, while the opening of the Peoria mill will give them an entrance to the south, a point which they have desired to invade for a number of years. Their trade has been steadily increasing during the last few years, and with the increased facilities which the Peoria plant will offer, with lower freight rates, cheaper fuel, and other inducements, it is the expectation that the new plant will virtually be master of the situation. They have several branches, but the Peoria mill and offices will be the headquarters. A large force of men will be brought here from Beloit, when the mill is ready for operation.

New Company Prospering.

GRAFTON, W. VA., July 14.—The Grafton Roofing Co., which was organized here some time ago, is finding the orders for roofing steadily increasing. At present the company has a number of nice orders and manager Wm. Mallonee is very much pleased with the company's future prospects. Considerable state work has been secured, which is a good recommendation for the kind of work done by this concern.

Compelled to Work Overtime.

YORK CITY, PA., July 6.—The Susquehanna Roofing Manufacturing Co. has completed its new mill and the plant is working 16 hours a day trying to fill their orders. Quite recently the mill made a record breaking run, turning out 1,380 rolls of two and three-ply tar paper. This is the largest number of rolls ever turned out in this mill in ten hours.

The National Association of Master Sheet Metal Workers will meet at Indianapolis, Ind., August 8 and 9. This is one branch of the roofing industry which will no doubt interest many of our readers.

Plaster.

Plaster for Exterior Use.

One of the uses to which plaster has been put with satisfactory results is that of an exterior wall covering. With the continued advance in the price of building materials of all kinds, the necessity of obtaining an economical substitute for lumber for exterior use has forced many to adopt the plaster idea. The results have been most pleasing, and the number who are adopting this form of construction are rapidly increasing.

This is not to be considered as a modern form of construction, for houses have been built that are still standing to-day in some sections of the country, which were plastered in this way more than fifty years ago. The number was small, however, as the supply of other materials, which could be obtained at a considerable saving in cost, were numerous.

Considered from the point of durability, appearance and economy, plaster is far superior to lumber. The great increase in the cost of the latter commodity is compelling many to use various substitutes and the advantages of plaster are making themselves felt.

While wooden lath has been frequently used upon which to apply the plaster coating, the necessity for using a good grade of hardwood has so increased the cost of construction, that many have adopted the wire lath, finding it very superior to wood lath. The plaster adheres more readily to this form of lath, which is nailed directly to the studding.

Care must be exercised in the component parts of the plaster; only the best materials, such as lime, cement, sand, etc., entering the mixture, to insure satisfactory results. In the matter of coloring several colors can be used, giving the most pleasing effects.

It can easily be seen that the use of plaster for exterior work must continue to increase. The houses are such as to attract the lovers of homes both unique and beautiful. The plaster manufacturer might bear this in mind and quietly urge the use of plaster in this field, with results that might prove most profitable to him and increase his output.

Educating the Plaster Users.

Hard wall plaster has attained such a strong place in the minds of the majority of users that the sales have multiplied faster than the manufacturers can supply the demand. This change has not come about without earnest efforts toward the education of the consumers by the hard plaster advocates. They have had many obstacles to overcome, in order that the merits of their commodity might be fully appreciated.

In the application of plaster to the walls the best materials must be considered; the wearing qualities have much to do with the subject, and both the water proof and the fire proof qualities must be borne in mind. All there features are covered in the good grades of hard, or wood fibre wall plaster, and the public is being educated to its fine points. The result is the best recommendation for its superiority and it will necessarily continue to gain in more general use.

A Wood Pulp Laboratory.

It will doubtless interest the large number of wood fibre plaster manufacturers to learn that the Forest Service at Washington, D. C., has established a laboratory at Boston, Mass., for the purpose of making tests of a large variety of American woods for pulp purposes. The growing scarcity of spruce is becoming very serious, and this action on the part of the Forest Service is to be commended, as it will throw some light on a highly important theme.

New Plants Soon to Be Operating.

FORT DODGE, IOWA, July 2.—The organization of the third gypsum company has just been completed in this city, within the past month. Two of the companies were organized the middle of June and the last one on the last day. All three of the companies are composed largely of local stockholders and all are to be independent mills. If the three plants are built this summer as intended it will give Fort Dodge thirteen mills.

The Iowa Hard Plaster Co., The Hawkeye Plaster Co., and the American Independent Gypsum Co., are the names of the three new companies. The United States Gypsum Co., commonly known as the trust, with headquarters in Chicago and its Western sales offices in this city, own seven of the mills at this place. Only two of the seven have been in operation this summer, the others having been shut down; some of them have been undergoing repairs. Arrangements have been completed at one of the mills by which the gypsum rock quarried a mile away will be brought to the mill by means of an electric railway. Trolley cars will convey the rock to the mills from the quarry and an electric plant for furnishing the power for the railway and lights for the different mills is to be installed at once.

Most of the stockholders in the trust who reside here have disposed of their stock and are free to engage in a similar enterprise. The improvements being made by the trust and the organization of the three new independent mills would indicate that sooner or later there will be a clash between the independents and the trust. The latter has been holding up the price of the finished product to $5.50 per ton which affords a liberal profit to the manufacturer and has no doubt been the means of attracting capital to the industry.

The last company to be organized will begin the work of laying a side track to the site of the plant this week. The work of sinking a shaft will also be started at once. They expect to be in shape to start the mill by the first of the year.

The Sackett Wall Board Co., with offices at 17 Battery Place, New York, N. Y., have closed a contract with the United States Gypsum Co., for the erection of a plant in this city adjoining one of the seven mills owned by the latter company. The building will be of liberal dimensions, one of them one thousand feet long and two hundred feet wide. There will be another three hundred feet square.

With the three new stucco companies organized and completing arrangements for their three mills this fall, this addition will employ a much larger force of people

Big Plant to Be Rebuilt.

CUBA, N. Y., June 29.—The American Fiber Plaster plant, which recently burned in this village, will be rebuilt. The officers of the company are: President, H. C. Morgan; vice president, C. A. Ackerly; secretary and treasurer, W. B. Ackerly. The directors are: H. C. Morgan, C. A. Ackerly, B. G. Sisson, W. O. Phelps and D. B. Sill. The officers and directors are all the same as in the old company with the exception of W. B. Ackerly, W. O. Phelps and D. B. Sill. Work on the company's new factory is now under way and will be pushed as rapidly as possible. The company expects to have its plant in operation again by August 1. The new factory will be a steel clad building 40x130 feet, which is considerably larger than the old one, and will permit the company to promptly meet the increasing demand for the high class grade of wall plaster manufactured.

Some Changes in Plaster Board Company.

KENTON, OHIO, July 6.—John Smith Scott, the well known Kenton contractor, has been made general manager of the Wells Plaster Board Co., which will locate several factories in different parts of the United States. The Wells Plaster Co. has elected the following additional officers of the year: Treasurer, John L. Clark; superintendent, J. R. Wells; assistant superintendent, Al Wells. The factory on the old Champion grounds is working steadily, and the sale of the Wells plaster board which is nailed on without the use of lath, is being pushed successfully. The market for the board is ready and the field is large. Mr. Scott stated to-day that the company would begin the location of branch factories in different parts of the United States. By this plan freight charges will be saved.

Improvements Giving Satisfaction.

The Buffalo Paragon Wall Plaster Co., 54-56 Broadway, Buffalo, N. Y., have installed a new steam sand dryer in their plant, manufactured by Merriman & Vought, Scranton, Pa., with a capacity of 70 yards per day, and the only heat that they use for drying sand is the exhaust steam through from 100 h. p. engine.

In reference to the sand dryer they say:

"We have found that the capacity of the sand dryer so far with exhaust steam is 70 yards in 24 hours. We suppose that by using a small amount of live steam that we could put through several yards more. We are very much pleased with the workings of the sand dryer."

New Plaster Company Operating.

MOUNDSVILLE, W. VA., July 2.—A new industry that promises to be one of the most substantial ones in the city is now in operation here. The Moundsville Wall Plaster Co. has erected a two-story brick building along-side the B. and O. railroad, and equipped it with a complete plant for manufacturing the modern kinds of wall plaster. Everything about the plant is arranged for making plaster economically as well as the best quality.

The name "Moundsville" has been adopted as a brand or tradesmark, and it will doubtless soon become very popular with users of this commodity.

The plasters now being turned out are "Moundsville," sanded gypsum, neat gypsum, wood fiber and cement plasters. The company also handles all building materials in that line. Wm. Fischer is the president, J. W. Peters, general manager, and Herman Hess, secretary and treasurer.

Fire Destroys Big Plaster Mill.

PORT CLINTON, OHIO, July 7.—The large plaster plant of the United States Gypsum Co. was destroyed by fire at an early hour July 2. The buildings were located about there miles east of this city. It is not known how the fire originated, it started in the south end at least 100 feet from the boiler room. The plant was equipped with its own fire protection, but the flames spread so rapidly that this was soon useless and nothing could be done to prevent certain destruction. Everything burned to the ground except the brick boiler room. This included the drying sheds and three cars loaded with plaster. This fire entails a loss of near $200,000.00 and about 200 men are thrown out of employment. The mines and mill were run with a night and day force and the output was about 250 tons of plaster daily. The manufactured products of these mills are in such demand that it has been impossible for a long time to keep up with orders. It is altogether likely that the mill will be rebuilt. The Consumers Co. has come to the rescue and so far as possible will help the U. S. Gypsum Co. to care for its orders and to this end will double both its night and day shifts. This will keep the men here who are now out of work by reason of the fire until it can be determined just what the United States company intends to do.

Secures Fine Order for Plaster.

WHEELING, W. VA., July 16.—The Wheeling Wall Plaster Co. have just closed up contracts to furnish the wall plaster for the Schmulbach building, which is the biggest order the company has ever received, the building requiring several thousand tons of wall plaster. They also have the contract to furnish the new federal building, which is also a very large order. Securing these big orders is evidence of the high grade quality of the product manufactured by this concern, which has grown to be one of our largest industries.

The Baker-Byars-Briggs Co., of Fort Worth, Tex., has been organized. The capital stock is $25,000.00. Those interested are: A. M. Baker, E. P. Byars and H. H. Briggs. The company will manufacture cement plaster.

The White-Bone Cement Plaster Co. has been organized at Weatherford, Okla., with a capital stock of $25,000.00. The company intend to manufacture cement plaster. The incorporators are: J. P. White, Weatherford, Okla.; T. J. Dozier, Indianapolis, Ind.; J. T. Thurman, Kansas City, Mo., and A. D. Aikel and J. S. Bryan.

The Olympic Plaster Co. has been organized at Seattle, Wash., with a capital stock of $15,000.00. Those interested are: S. J. Hull, A. S. White and C. A. Watrous.

Evidence of Progress.

It is gratifying to note that the plaster industry is making such progress. The number of new organizations, together with the increase in the output of those engaged therein, is the best evidence of prosperity. The industry has made notable improvements and the high character of the output is such as to command the attention of all users of this commodity.

Another Plaster Board Company.

ST. JOSEPH, MO., July 18.—The Kimmet Plaster Board and Manufacturing Co., capital stock $20,000.00, entirely paid up, has been incorporated. The incorporators are: Hugh J. Bowen, John M. Bell, Theodore B. Hoagland, Charles E. Thornton, George O. MacLiesh, Morris Fine, Claude V. Hickman, Dr. W. B. Deffenbaugh, Henry Kimmet and Lemuel M. Sneary. All of the stockholders live in St. Joseph. The new company has already begun the manufacture of its product, the patent of Henry Kimmet, in a building at Fourth and Jackson streets. The plaster board is destined to take the place of lath and the first coat of plaster. It has been used in a number of St. Joseph buildings. The company is incorporated for the purpose of manufacturing the plaster board, erecting buildings, purchasing machinery, etc. The incorporation is to continue for fifteen years.

New Wood Fiber Plaster Plant.

COFFEYVILLE, KAN., July 20.—One of the industries which was located in Coffeyville during the past few months and which is now getting in shape to place its product on the market is the Kansas Wood Fibre Plaster plant. The machinery in the building is practically all in place and the plant has turned out some product. A few changes will be necessary in the adjustment of the machinery, but this will require only a short time and the plant will be running regularly before the close of the month. The plant has a capacity of fifty tons a day and as soon as the change in the elevator is made, it will be run to full capacity. The plant is owned by J. S. Stoner, who is personally directing the work, employs five men at present and as the business increases more men will be added to the payroll.

May Remove Plant to Coast.

SAN DIEGO, CAL., July 3.—There is a possibility of the early establishment in San Diego of a wood fibre plaster company, James A. Jasper, secretary of the chamber of commerce, having received a letter from the F. R. Dunn Co., of Denver, Col., asking for information as to the securing here of soft woods, etc. The Dunn Co. are large operators, and it is supposed that if it established a plant here it would be a big one calculated to supply the entire state as well as the entire Pacific coast. Secretary Jasper replied that there is an abundance of cottonwood timber available and that the supply of soft woods from Oregon could be secured in any amount desired. The advantage which would accrue from the harbor facilities here were also touched upon. It is very probable that we may secure this industry.

The Chicago Plymouth Plaster Co., of Chicago, Ill., has been organized with a capital stock of $40,000.00. The company will mine gypsum and manufacture its products. Those interested are: A. H. Tywell, Robt. J. Fellingham and Hugh L. Burnham.

The International Cement and Plaster Co., of New York, N. Y., has been organized to do plain and ornamental plastering. The capital stock is $10,000.00. The incorporators are: John J. Hayden, E. Ralph Breck, Jacques L. Woldenberg, No. 258 Broadway, New York.

The Thomas Parker Co. has been incorporated at Boston, Mass., to do plastering and stucco work. The capital stock is $4,000.00. The officers are: President and treasurer, Frank C. Nichols, Roxbury, Mass.; clerk, Robt. Pennington, 113 Southern Avenue, Dorchester, Mass.

The Pioneer Plaster Co., of Seattle, Wash., has been organized with a capital stock of $25,000.00. Those interested in the new organization are: Cecil H. Bacon, Frank T. Croun, Earnest A. Hertzberg, George A. Haley and S. W. R. Daily.

Clay.

Summer Meeting of Ceramic Society.

The Seventh Annual Summer Meeting of the American Ceramic Society will be held at the Grand Hotel, Beaver Falls, Pa., from August 1 to 3. There will be no papers read at this meeting, which will rather be in the nature of a social gathering. Arrangements have been made to visit a number of plants in the vicinity, and other features of interest will be found to entertain the members. It is expected that a large number will be present, and that the sessions will be conducive to the general good of the industry.

Clay Products Show Increase.

The increase in clay products for the year 1905 over that of 1904 is quite large, as is shown by the United States geological survey report. The total value of these products for the past year was $149,697,188.00, while in 1904 the amount was $131,023,248.00. Of the values last year $121,778,294.00 was represented by brick and tile, and $27,918,894.00 for pottery.

Clay Roofing Tiles Can Be Made Popular.

This is an age when the desire for something in the way of unique and attractive articles from clay are sure to find favor in the public eye. Of the many specialties manufactured from clay that of roofing tiles has not been given as much attention as the industry deserved. Other materials have grown in use and popularity for roofing purposes, while, through a lack of push, clay roofing tiles still remain an article very little known.

It frequently happens that this subject is brought to our notice, and that there is a splendid opportunity in this line for a progressive genius, does not admit of doubt. Clay roofing tiles can be made as popular as any other material, but it will require a little activity on the part of anyone who contemplates entering this field.

Sewer Pipe Association Dissolves.

What has been known as the Sewer Pipe Trade Association has been dissolved. The reason is due to the fact that an investigation had been started by a Federal Grand Jury, at Jamestown, N. Y. It was agreed between the attorneys that the proceedings should stop if the association ceased to exist as an organization. A number of large sewer pipe concerns were interested, though it is not known that anything was done toward regulating or controlling the price of the sewer pipe output.

To Manufacture Clay Products.

GRAND LEDGE, MICH., July 13.—The Grand Ledge Clay Product Co., has been organized here with the following officers: President, E. A. Wilson; secretary and general manager, F. A. Turnbull; vice president, W. E. Tabor, treasurer, A. R. Gillies. All the officers are Grand Ledge men, but the stockholders include a number of prominent business men in Lansing and Grand Rapids. They own a piece of clay land just west of this city and will at once begin the erection of a plant which includes a main building 80 x 200 feet and two stories high. Telephone and telegraph conduits and other clay products will be manufactured.

Tile and Terra Cotta Company.

LOS ANGELES, CAL., July 10.—The California Tile and Terra Cotta Co. has recently been incorporated in this city. The capital stock has been fixed at $500,000.00, of which $50,000.00 has already been subscribed and paid in. The directors are: L. Lindsay, E. M. Durant, of Los Angeles; E. Randolph, Tucson; B. Curtis, Nogalis; F. C. Keller, Los Angeles.

Clays for the Manufacture of Sewer Pipe.

The successful manufacture of salt glazed pipes from various kinds of clays, or clay mixtures, requires a considerable amount of special knowledge, which is different from that needed in the manufacture of other clay goods, though a good knowledge of general clay working is of great value to the pipe manufacturer, says a writer in the *Brick and Pottery Trades Journal.*

In the first place, in order to produce first class salt-glazed pipes, it is necessary that an analysis of the clay to be used should be obtained, so that a correct understanding as to the composition of the clay material may be obtained. In this way should the clay contain much lime, iron, or other matter, which will cause trouble if not specially guarded against, the pipe manufacturer with such knowledge is ready at the outset to know where special care is needed. Without such information he may often fail after years of trial. In some cases it will be found possible to improve the clay by adding matter in which the clay is deficient; for instance, if the clay be low in silica, it will be advisable to add to it a small percentage of a finely ground clay which is known to contain a large proportion of silica, such as certain fireclays or gannister. This will cause the goods to take a better glaze, for unless a clay contains sufficient silica with which the salt fumes can combine, a good, bright, deep glaze can not be obtained.

In considering the suitability of clays for sewerage pipes, the chief character which must not be overlooked is that the clay must burn to a vitrified or semi-vitrified mass, as otherwise the pipes will not be sufficiently strong to bear the weight of soil and traffic upon them when they are in use.

Different kinds of clay usually require different methods of preparation. Ball-clays can not be prepared and worked in the same manner as fireclays —each clay must be treated according to its nature. Plastic clays require greater care in preparation for pipe-making than do short, sandy-natured clays, and fireclays require a much longer time to "sour" before they become fit for use than do the plastic ball-clays.

The best bodies for "stoneware" pipes are made by mixing two or more clays together with sand and "grog" according to the natures of the clays and to the diameter of the pipes to be made, as large pipes require a larger quantity of grit than small ones.

Great care must be taken to ensure that all the clay is thoroughly dry when it goes to the mill, or it will not grind to a sufficient small grain or dust. If mixed and "wetted in" at once the clay will not "dissolve," but will remain in small stiff, sticky lumps, which will cause the pipes made from such clay to be defective owing to the body not being thoroughly uniform in composition when fireclays are used.

Making Big Improvements.

ALBANY, N. Y., July 10.—The Newton Fire Brick Co., which has settled on Van Rensselaer island, is fast completing the preliminary work for conducting the plant. The channel has been deepened to allow the boats to land and unload. The immense trestle work which the company has been erecting will be in running order in a short time. A double row of tracks, one above the other, is being constructed and the cars will be propelled by a cable. Power will be furnished by the company's own plant.

The Courtney Fire Brick Co., of Courtney, Pa., suffered the loss of a greater portion of its plant by fire July 4. The loss to the company was about $30,000.00. The amount of insurance is not known, nor are the future plans of the company.

The Portsmouth Paving Brick Co., of Portsmouth, Ohio, has been organized with a capital stock of $30,000.00. W. L. Hitchcock, H. S. Grimes, Simon Labold, J. W. Bannon and Dan W. Conroy are the incorporators.

A new company has been organized at Vallejo, Cal., with S. W. West as president and F. M. Knapp, secretary, both of Salt Lake City, Utah, to manufacture vitrified brick. The capital stock is $100,000.00. The daily capacity of the plant will be 100,000 brick.

The Dillsburg Vitrified Brick and Tile Co., of Dillsburg, Pa., has been organized. The capital stock is $100,000.00. The company will manufacture brick and tile.

Sand and Gravel

Why Sand Should Be of Quality.

Standard sand is a comparatively rare commodity. Reference is made to the finest quality of sand for use of construction demanding the highest class of workmanship. Common pit sand is to be found on every side, and can be used in general work without danger of failure, so that, as a rule it is not necessary to make a careful test as to its quality.

There are certain forms of construction, however, for which ordinary sand is wholly unfit, and the necessity in such cases for doing satisfactory work is due in great part to the kind of sand used. Perhaps the ordinary sand dealer does not give this theme as much consideration as he should, and he naturally loses considerable business which he might just as easily obtain. We have made frequent reference to this subject, but as it is of the greatest importance to the sand man, repetitions are permissible.

Simply dredging or digging your sand and sending it to your customer is a poor requisite for your future business prosperity. Much more care is needful in the study of your commodity. You may have sand of the highest quality, but unless it is ascertained and graded accordingly, you are working in the dark, and your losses are naturally large.

Quality sand—sand which is almost pure silica, is indeed the rare kind which will demand not only the best price, but will increase as time goes on. The age demands the best of everything. Modern construction requires the highest quality of material, and the sand operator should be in touch with all these conditions.

Limestone-Sand or Dust.

Generally speaking, it might be supposed that owing to the very plentiful supply of sand to be found in almost every locality, the need for this commodity could be met quite readily. Further than this to find a substitute, so called, for sand seems altogether unneccessary. Experiments have been made, however, with materials, which, when ground, have proven most satisfactory.

Sand from crushed granite is one of the latest of these experiments, mention of which was made in our last issue. Crushed sandstone has long been found of great value for all kinds of work requiring the best quality of sand. It is not generally known that limestone, properly crushed, makes a sand of excellent quality, particularly for use in concrete work. Tests of this limestone-sand have been made with results fully bearing out the hopes of those who made the trials.

Where exterior concrete work is to be done, such as the construction of sewers, conduits, drains, culverts, retaining walls, etc., limestone, dust or sand gives the best possible results. This will be in the nature of a surprise to many, as it shows in a very forcible manner the little known possibilities of certain materials for building work.

For street work, limestone dust is a practical substitute for sand, and its use continues to find favor among contractors. Limestone-sand will likewise grow in popularity and, while not encroaching on the other kinds of sand, will add to building operations its quota of usefulness.

Black Sand Investigation.

The investigation of the black sands of the Pacific Coast, which has been carried on for over a year by the United States Geological Survey, at Portland, Ore., will be continued until the first of September. After that the plant will be transferred to Chapel Hill, N. C., where a similar work will be carried on in connection with the Geological Survey of the state. It is believed that the sands of the eastern coast will be found as rich in valuable minerals as concentration experiments have shown those of the Pacific slope to be.

Sand Best for Gasoline Fires.

The best way to put out a gasoline fire is to use sand. Experiments were made by the London fire department with burning shavings which had been soaked in gasoline. Sand extinguished the fire in 45 seconds; water in 4 minutes, and chemical extinguishers had little effect. If you have conditions where a gasoline fire is possible, better keep a pail or two of dry sand handy. It is inexpensive, never spoils, and will do the business.

To Operate Big Deposit.

WILKESBARRE, PA., July 6.—A company composed almost entirely of local capitalists has been formed with a capitalization of $50,000.00 to develop a stone quarry located at Lopez, and which is rich in silica, or glass sand. This company has purchased 300 acres of the finest sandstone in this section, which is located right in the town of Lopez, the rock rising at that point to a height of more than sixty feet above the surface of the surrounding land. It is the purpose of the company to crush the stone into sand, as the sand thus procured will be of much higher grade than any that can be procured in this vicinity. The sand procured from this stone will assay 99 per cent pure silica. The sand will be shipped from the plant on the steam roads and will bring a high price. A meeting of the stockholders was held in this city recently, and the question of equipment was taken up and settled. As soon as the machinery had been installed the work of preparing the stone will be commenced and during the coming winter the firm intends to manufacture cement brick and block. The stockholders of the new company are: General C. Bow Dougherty, Thomas Wilson, Joseph Held, C. L. Nagle, Arthur H. Bloom, treasurer of the Luzerne County Trust Co., and M. R. Mosier, of this city; Dr. F. L. McKee, of Plymouth, and R. M. Law, of Philadelphia. It has been decided to call the new company the Lopez Sand Co.

Purchase Sand Deposit.

MIDDLETOWN, N. Y., July 16.—Samuel J. Boyd, of Otisville, has sold his valuable sand bank, comprising some fourteen acres, which extends along the Erie railroad for about 1,600 feet. The purchasers are John Leslie Wilbur, of Mount Hope, and George R. Bull, M. D., of Bloomingsburg. This sand deposit contains some of the best grades of sand to be found, not only for all kinds of concrete work, but also for foundry and asphalt. While for a number of years sand has been sold from this bank, orders came in so rapidly, that about a year ago Mr. Boyd put in a switch from the railroad, and since then has handled great quantities of sand, filling orders from all parts of the country. It is estimated that there are about 500,000 cubic yards of sand in this bank, and the purchasers are to be congratulated in securing this property.

Busy Sand Company.

CHESTERTON, IND., July 10.—The Krug Sand Co., of this city, are enjoying a nice business this season. They have some large contracts which will keep them engaged for some time. The building outlook is good and the call for sand is naturally quite large.

The Silverwood Sand and Gravel Co. has been organized at Terre Haute, Ind. with a capital of $10,000.00. The directors are: Charles C. Whitlock, Robt. J. Smith, B. A. Neal and H. E. Neal.

Harrison Bros. Gravel Co., of St. Louis, Mo., has been incorporated with $10,000.00 capital stock, fully paid up. Geo. F. Harrison, J. Ed. Harrison, Ann C. Harrison, O. C. Harrison, Wm. Gallaher, Geo. B. Evans and D. G. Fisher are the incorporators.

The Santa Cruz Sand Co., of San Francisco, Cal., has been incorporated with $10,000.00 capital stock. $500.00 has been subscribed. The directors are: Randolph Whiting, W. R. Hoag, C. E. Arnold, C. R. Holton and Edward E. Simpson.

The Southern Gravel Co. has been organized at Mobile, Ala., with a capital stock of $5,000.00. The incorporators are: A. J. Boyles, C. W. Boyles, E. A. Wierengo, Aubrey Boyles and Moses Kahn.

The Merom Gravel Co., at Sullivan, Ind., has lately received several nice orders for its output, and is quite busy.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

OFFICERS:

GORDON WILLIS.....President.
St. Louis, Mo.
H. C. GODFREY.....Vice President.
Bridgeport, Ct.
CHAS. WARNER.....Vice President.
Wilmington, Del.
C. O. PERKINS.....Vice President.
DesMoines, Iowa.
A. W. EISENMAYER.....Vice President.
Granite City, Ill.
D. L. MATHER.....Vice President.
Richmond, Ind.
T. W. SPINKS.....Vice President.
Covington, Ky.
JOHN J. KELLEY.....Vice President
Baltimore, Md.
J. G. LINCOLN.....Vice President.
Boston, Mass.
S. A. NORMAN.....Vice President.
Grand Rapids, Mich.
W. P. COCKEY.....Vice President.
Minneapolis, Minn.
HOWARD McCUTCHEON.....Vice President
Kansas City, Mo.
H. P. COOK.....Vice President.
Newark, N. J.
M. A. REIB.....Vice President
Buffalo, N. Y.
E. C. KISSINGER.....Vice President.
Columbus, Ohio.
GRANT MURRAY.....Vice President.
Pittsburg, Pa.
B. L. GROVE.....Vice President.
Washington, D. C.
R. W. MARSHALL.....Vice President.
Wheeling, W. Va.
C. P. FLATLEY.....Vice President.
Green Bay, Wis.
CHAS. H. CLASSEN.....Treasurer.
Baltimore, Md.
HARRY S. WEST.....Secretary.
Toledo, Ohio.

Official Organ, ROCK PRODUCTS.

Two Kinds of Builders Supply Dealers.

The dealer in builders' supplies who has a full and complete line constantly has the advantage over his competitor who merely keeps a file of catalogues or more generally just a heterogenous pile of catalogues over which he must paw and dig for any special accessory that may be required in the specifications. In these days every dealer tries to carry a stock consisting of two grades of Portland cement, one of natural rock cement, two kinds of plaster and an assortment of sewer pipe together with a line of face and fire brick, and on the surface one man's line of supplies looks to be about the same thing as that of every other.

The thing that counts is having every detail in your warehouse or on your yard that is to be found in the specifications, because in making your bid you can sell and deliver promptly what you have on hand. That which has to be ordered specially to complete the order, after it is secured, costs a great deal more and almost invariably causes an expensive delay to the contractor and that means a dissatisfied customer every time.

We know of an instance where a supply man allowed his stock of sewer pipe to run down so that he did not have an eight inch elbow in the yard. He was not on good terms with his competitor, and it was necessary that he order the fitting from a distant city by express. The express driver was not accustomed to handling this kind of ware and in delivering it on the job set it down with a thump against a brick bat and broke a piece out of it right in the bend rendering it totally useless. This called for another telegram and another express delivery, and this time you may depend upon it, that it was handled with much profanity and kid gloves.

The contractor was putting in a basement and had his concrete work up to that sewer pipe elbow and it meant three days' delay for the contractor who was paying a penalty of $50.00 per day beyond a certain day for the completion of the job. The same contractor had two other big jobs with the excavation almost complete. He was so annoyed with his friend, the supply dealer, that he did not even give him a chance to bid on the other two jobs, and they went to another dealer without competition, because he had the reputation of having every detail complete and made a point of prompt deliveries.

Now when the first job was completed, it happened that the contractor was just three days late and he was charged with a forfeit of $150.00. This $150.00 he forced the supply man to pay, together with the lawyer's fee and the cost of the court plus the damage occasioned by his agreement with his workmen who drew half pay for the time that they were laid off while waiting for the double delivery of the eight inch fitting. This sum of money in all probability, amounted to more than the net profit upon the $3,500.00 worth of supplies of various kinds which this supply dealer furnished upon specifications. The dealer in question stated that when he made his figues on the job that he thought he had plenty of elbows and that is why he did not provide for the fitting before it was wanted.

Now here is a case where a man did not know his stock well enough to intelligently make a bid and after he secured the contract it was gross carelessness upon his part not to provide for every item in plenty of time. He failed to do the very thing that he went into business to accomplish, namely, to accommodate and supply promptly every specified item of the bill upon which he makes a bid and naturally when he failed to do this he paid the forfeit, the costs and the damages, and now he says there is not much money in the business anyway.

We call to mind another case where the contractor needed a nuumber of fire backs, flue linings and thimbles of several sizes in the same job and received the figures from four supply dealers. Three of the bids had a notation which stated that several thimbles or a certain size of flue linings would have to be ordered and only one bid stated that the dealer was prepared to deliver all the supplies as fast as they could be hauled, and the four bids his was the highest because he charged a little more for his lime and a little more for his cement and a little more for his plaster, while his figures were lower upon the thimbles, the fire backs and flue linings.

BIG WAREHOUSE IN MEMPHIS, TENN., SHOWING THE RECEIVING SHED OVER THE SIDING.

The contractor asked him to trim his figures, but the wily dealer knew the pressure for the time upon the job and knew that he was the only man in the market with the goods, so he stood pat and received the order because he was Johnny on the spot, knew his business and charged the other man for his head work.

In this case the contractor thought he would push the dealer for deliveries, but this dealer is an early riser and is proud of his reputation upon this very point and he turned the tables on that contractor completely pushing him so hard with deliveries that he had to build a shed to take care of his stuff. The contractor was in this case delighted with the service. He was able to push his workmen every minute they were drawing pay and this enabled him to finish the job sooner than he expected and naturally with a larger profit. Now he tells the dealer that even at a higher price he can make money by handing out the business to the man who is ready with the goods and studies the all important question of prompt delivery at the job.

The dealer who studied his business, who knew what he had on hand, who makes a study of the specifications in his line as they progress, who knows what the architect is likely to call for and who knows exactly what is on his yard, and in his warehouse so he can promptly order any shorts before they are wanted, is the man who makes the money for himself, the contractor and thereby secures the good will of his customers even when he is charging a higher price for his goods.

New Firm Are Hustlers.

MEMPHIS, TENN., July 18.—The Cubbins Lime and Cement Co. is one of the new concerns in the builders' supply business that is making good in large numbers. They were fortunate in the first place in securing a very large warehouse with railroad siding connecting with the L. & N. system and located close to that section of the city where building operations are carried on most extensively. The city of Memphis is growing very rapidly, and the new resident properties that are being built in the eastern part of the city constitute the larger fraction of the construction operations going on, in spite of the fact that the business district of the city bordering on the river is experiencing the greatest building boom on record. The large number of skyscrapers and business buildings of lesser importance have been erected on Main street, on Madison and Sycamore, besides warehouses of every description.

This company was started about the middle of April and the first supplies that reached them was a car of bulk lime from Erin, Tenn., and a car of Black Diamond cement from Louisville, Ky. This was on April 15, and the wagons and teams were already provided so that as fast as their goods arrived they were promptly handled, and with the beginning of active construction operations in the city, both Fred and Ed Cubbins got busy looking up orders, and they were not slow in finding all that their teams could handle. They secured the agency for the Whitehall Portland cement and the United States Gypsum Co.'s line of plasters and finish, while the new brand of Speed's Portland cement and Black Diamond natural rock cement filled them out in this direction. They handle lime from Erin, Tenn., and a smaller amount of lime from Little Rock, Ark. They carry a large line of sewer pipe in the sizes which are mostly specified by the local architects and they make it a point to carry a very complete line of fire backs, fire linings, thimbles and fire brick. Their line of face brick includes the best selections of clay brick that are on the Memphis market, besides white brick made at the local plant and elsewhere.

Mr. George Frazer is the office man who has had a great deal of experience in the supply business, and he makes it his first duty to see that the teams are so manipulated as to keep all the customers accommodated with materials as they need them. Fred Cubbins explains that their drivers must notify the office where they are every half hour so that they have every team located and can make an intelligent engagement with a customer as to the exact minute he may expect a delivery from their establishment. Business has been so good in Memphis this year in the supply line that the greatest problem has been keeping up the various stocks so as to have a full assortment, and be in a position to supply the needs of the contractors who are pushing their jobs to completion.

Fred Cubbins says the Western Cement Co., of Louisville, Ky., take the cake for prompt delivery. A telegram one day will produce the goods on the morrow, and of all the people who ship to Memphis, they have to take off their hats to their system. The metal lath proposition has not taken at all in Memphis, probably on account of the enormous lumber interests of the city, which produce so much wooden lath as a side issue, selling much cheaper in this market than it can be obtained elsewhere. The same thing is true of shingles for roofing purposes, while quite a few builders use metal roof the clay tile is just being introduced and several local architects specify tile roofs and slate roofs when they can get them. This company has not secured anything in the way of roofing material, either in the way of slate or roofing tile but it will not be long before they will have this item covered just as efficiently as they have provided for all the other requirements of the contractor.

Dealers in the Northwest.

WINNIPEG, MAN., July 14.—A concern here who has made a reputation for itself in builders' supplies and contracting work is Dobson & Jackson. They deal in cement, sand, gravel, plaster, lime, plaster of paris and hard wall plaster as well as rubble and crushed stone. They likewise do concrete work of all kinds, and have been awarded a large number of contracts. Their warehouse is large and modernly built, and is so arranged as to permit of carrying a large and varied stock of materials.

A Pointer for Supply Men.

It would be unreasonable to suppose that every small dealer in builders' supplies should carry a full and complete line, for in many instances such would be wholly unnecessary. Superfluous stocks are in nearly all cases unnecessary burdens which involve the dealer in several ways. He must have ample storage room, plenty of capital and take no useless risks, which do not improve his general condition.

On the other hand he must acquaint himself with the needs of his particular locality, and endeavor to carry as complete a stock as possible. A lack of foresight in this direction will be a great drawback to the success of the supply man's prosperity. If the prospective purchaser can not be supplied from his local material depot, he will naturally seek other quarters, with the knowledge that his wants will be taken care of promptly.

In lieu of his ability to carry a large and complete line of building materials, he should take care to keep himself posted as to where and how he can secure the various supplies, and the cost of same. These items can be obtained from catalogues and price lists of leading manufacturers, which he should at all times have for ready reference.

By such methods the progressive supply dealer can very materially improve his business and gain an enviable reputation for promptness and modern business dealings. This becomes essential when the demand and variety of builders' supplies has so changed as to make it a business of magnitude. The keenest dealers are always looking for suggestions, and we believe that one is offered here which will prove at least helpful to a degree.

Lessons from Present Conditions.

The present building activity in every section of the country has been most conducive to the prosperity of the builder supply dealers. The prices have been well maintained and many of the dealers have been taxed to their utmost capacity to meet their demands. This stimulous has done much toward not only increasing the number of dealers but has also had the desirable effect of making a great many look to their laurels by giving more care to their line, and carrying a fuller supply to meet their requirements. There are many things that should have the attention of the progressive dealer in builders' supplies, and during the present year these things have been forced to his notice, and the results are notably gratifying. The future is therefore more hopeful, and the returns will be in accord with this favorable turn of affairs.

Are Progressive Dealers.

GRANITE CITY, ILL., July 11.—The Granite City Lime Co. writes us: "We are pleased to say that we are enjoying the best trade we have had since we began business. Prices are steady on all goods that we handle except cement. It is a hard matter to sell hydrated lime in our city, and we think there is very little demand for it in any part of Illinois. The most popular plaster in our opinion, in the State of Illinois, is Agatite, manufactured by the American Cement Plaster Co. You will see that we are sincere in our opinion, when we tell you that we had 8,000 tons of this material in our warehouse at one time, two-thirds of which we moved in 90 days. We are shipping from three to five cars of this plaster every day. We do not find that the contractors here are particularly anxious to pay a good price for a high grade material. They will buy the cheapest material at all times. We are installing in our warehouse, a Graves belt carrier, for handling cement and plaster in sacks. The machine is portable. We can not tell yet whether it will save us money or not, but we hope it will.

"We do not consider plaster, cement, hydrated lime or any other rock product packed in paper sacks a cheap way to handle goods. Whenever we receive a car of goods in paper, we are obliged to resack from 20 to 100 sacks which have been ground to pieces in transit. Muslin or jute sacks, in our opinion, is the only way to handle cement and plaster."

Building Not Brisk Now.

ALTON, ILL., July 11.—The Alton Builders' Supply Co., say: "Business is good in these parts, prices are high and are going higher we believe. Building is not so brisk as a month ago, but it usually slows up in July and August. This is a dark plaster town and hydrated lime has so far been hard to introduce.

General Indications Good.

INDIANAPOLIS, IND., July 16.—A. B. Meyer & Co. large handlers of builders' supplies, write us: "We have doubled the capacity of our Stonewall plaster mill and at present are engaged in supplying three car loads per week for plastering the interior of the buildings at Ft. Benjamin Harrison, Army Post at Lawrence, Ind. We have also just been awarded the contract for the use of our wall finishes for these buildings. Their requirements will be about 2,000 tons. The Indianapolis market is fast changing towards using Portland lime where lime mortar is used. The trade is gradually increasing during the past few years to the extent that more than half the lime used in our city comes from the Portland kilns. The general trade on building material has been very good this season, and prospects are very bright for a large demand this fall."

Enjoying Building Era.

Business conditions in Hamburg, N. J. are reported to be good. The New Jersey Lime Co. say that the building boom is on in earnest in that locality, and the past few months have been active ones. Improvements have given all kinds of building materials a boost, so that the prices have risen quite considerably. Brick has advanced in price so much of late that it has had a tendency toward checking operations in this line, though other materials are in good demand.

Incorporate Big Supply Company.

The Briar Creek Brick and Cement Co. has been organized at Charlotte, N. C., with a capital stock of $100,000.00, of which amount $5,000.00 has been paid in. The company will manufacture and deal in brick, cement, concrete blocks, sand, clay, etc. Those interested in the organization are: J. B. McLoughlin, J. P Carr, R. J. Foil, W. S. Pharr and J. H. Ross, all of Charlotte, N. C.

The Post Pipe Co., Texarkana, Tex., announce that they have just completed their first kiln of sewer pipe, and that it is very satisfactory. The color of their pipe on account of the chemical properties of the clay is lighter than was expected, but the material is sound, well glazed, thoroughly vitrified and exceptionally strong, and they state that they have no hesitation in guaranteeing its quality to be equal or superior to any other sewer pipe now made in the South. They invite the correspondence and orders of the builders' supply dealers, and especially those located in the Southern States.

Fred C. Bogk, of the Rickettson Mineral Paint Works, Milwaukee, Wis., who is so well known to the representatives of concrete block and brick establishments as to "color man," has been making bright and pleasing colors for the concrete industry, until his mind got to running in poetry. This is his latest skit, and while he admits that there may be better poets, there is only one Rickettson color.

"Reading the ad. of Miss Phoebe in white,
And her trip on the road of the Anthracite,
Reminds us all of railroad trains
That are operated by careful brains.
Thousands of freight cars looking bright
And pleasing to everybody's sight,
But those unsightly cars that 'aint'
You'll know don't use '*Ricketson's* paint."

"The C. M. and St. Paul road are painting 3,000 freight cars with our paint."

CONCRETE RESIDENCE IN ROCHESTER, N. Y., CONSTRUCTED OF BLOCKS MADE ON HERCULES MACHINE.

Doing a Big Business.

A report from Rochester, N. Y., states that the Century Cement Machine Co., maker of the Hercules Cement Stone Machine, is increasing its facilities as rapidly as possible to keep up with the rapidly increasing demand for the Hercules machine.

Besides doing a large domestic business this concern is receiving many orders from foreign countries. Last week four machines were shipped to Ireland, the third order from a contractor who has been using the Hercules for over two years.

The manufacturers of the Hercules have had several years of experience, being among the first to turn out a good cement stone machine, and this experience is shown to good purpose in the 1906 Model Hercules, a machine that seems as perfect in construction as it is possible to make it.

The Hercules is a very simply constructed machine built without chains, cogs, bolts or springs. It is so arranged that two stones of the same size or design or of different sizes and designs, can be made on the one machine at the same time.

On the Hercules, blocks and also all kinds of ornamental work, columns, cornices, etc., from two inches to six feet, can be made rapidly and perfectly.

FOR SALE—MACHINERY.

NO. 3 GATES' CRUSHER and a 10 h. p. gasoline engine. Write quick. Address THE BELLEVUE STONE CO., Bellevue, Ohio.

TEN WARDELL channelling machines, in fair condition. Cheap. May be seen at our quarries, Amherst, Ohio. Address or call on the Ohio Quarries Company, 818 Euclid Avenue, Cleveland, O.

TWO NEW PATTERN gang stone saws, 14-0 x 6-0. One new turning lathe 12-0 x 3-0. Cheap Address Pleasant River Granite Co., Addison, Me.

BUSINESS OPPORTUNITIES.

A COMPLETE PLANT for the manufacture of cement blocks (Miracle patent) brick, and drain tile and side walk blocks. Practically new; water power and sand pit at plant; power and hand block machines, both complete, good location and market. Present owner has too many business interests to look after to take care of plant. Address A. I. OLDING, Redfield, South Dakota.

CEMENT PROPERTY located in Warren County, New Jersey, for sale, or partner to supply the necessary funds to complete it. All buildings and railroad connections complete and part of the machinery installed. Present owners will retain their interest if necessary. Address Rock Products, Room 431, 136 Liberty Street, New York, N. Y.

FOR SALE OR LEASE—A Granite Quarry, situated 20 miles from Baltimore, Md., and Washington, D. C. It is partially opened and equipped, 30 h. p., ledger main edge, derricks, tools, and equipment, including crusher at Guilford, Howard County, Md. Address RUFUS W. APPLEGARTH, 10 E. Lexington St., Baltimore, Maryland.

WANTED TO CORRESPOND with good practical parties, who would like to be interested in or develop a rich gypsum mine, located in Northern Ohio. Ground floor opportunity for right partes. Write L. D. LINK, Treasurer, Locust Point Oil and Gypsum Co., Oak Harbor, Ohio.

FOR SALE—MISCELLANEOUS.

DYNAMITE 25 per cent off. We offer a limited quantity of 30, 40, 60 per cent Dupont Nitro Glycerine Dynamite at about 25 per cent off regular price. Correspondence solicited and samples forwarded on request. NATIONAL PLASTER AND SUPPLY CO., Parkersburg, West Virginia.

WANTED—MISCELLANEOUS.

EXTRA COPIES of January, 1903, and January, 1905 Minutes National Lime Meeting, for Ohio State University. Address PROF. EDWARD ORTON, Columbus, Ohio.

ROCK PRODUCTS' ADVERTISERS INDEX.

Advertisers after which the page number does not appear the advertisement will be found in the next issue:

Abbiatti, E. & Bros.
Aetna Powder Co. 63
Ahern, James.
Allis-Chalmers Co. 13
Alpha Portland Cement Co. 2
Alsing, J. R. & Co. 13
American Air Compressor Works.
American Clay Working Machinery Co. 66
American Granite Co.
American Hydraulic Stone Co. 51
American Process Co. 18
American Rolling Mill Co. 60
American Sandstone Brick Co. 51
American Sand Lime Brick Co. 67
American Sewer Pipe Co. 68
American Soap Stone Finish Co. 62
Anderson Marble Works.
Anderson Bros.
Anderson, Geo. & Co.
Ash Grove White Lime Association 7
Ashland Fire Brick Co. 18
Ashland Steel Range Co.
Atlas Car Mfg. Co. 68
Atlas Cement Machinery Co. 57
Atlas Portland Cement Co. 68
Aurora Boiler Works.
Austin Mfg. Co. 14
Averill Granite Co.

Backus Gas Engine Co.
Banner Cement Co. 5
Bartlett, C. O. & Snow Co., The. 17
Barre White Granite Co.
Bates, I. W.
Bates Eng. Co. 48
Bedford Quarries Co., The.
Bedford Steam Stone Co.
Bell, Edwin Co., The. 65
Bergbauer & Perry.
Bianchi, Chas.
Big Four Route. 63
Bliss Dryer Co. 1
Bilodeau, J. O.
Binns Stucco Retarder Co. 1
Birmingham Iron Foundry.
Bishop, Joseph.
Blue Ridge Marble Co.
Bostwick Steel Lath Co. 61
Boutwell, Milne Varnum Co., The
Bowers, R. C., Granite Co.
Brooks-Curtis Stone Co.
Broomell, Schmidt & Steacy. 66
Buckeye Portland Cement Co. 2
Butterworth & Lowe. 64
Caden Stone Co.
Cameron D. E.
Cappon, Thomas W. 48
Carpenter, R. H.
Carthage Superior Limestone Co.
Cascna & Ciconi.
Case Mfg. Co.
Caummisar, T. C. & Sons.
Cement Machinery Co. 54
Cement Machinery Mfg. Co. 54
Century Cement Machinery Co. 53
Chase Foundry and Machine Co. 52
Chattanooga Paint Co. 51
Chemical Stucco Retarder Co. 62
Chicago Belting Co. 1
Chicago Pneumatic Tool Co.
Chicago Portland Cement Co. 2
Chickamauga Portland Cement Co. 2
Chickamauga Quarries Co.
Clayton Air Compressor Works.
Cleveland Builders Supply Co. 8
Cleveland Car Co. 48
Clyde Iron Works. 15
Clinton Metallic Paint Co. 18
Cohen, Michael.
Concrete Engineering and Equipment Co. 61
Concrete Stone & Sand Co. 55
Consolidated Granite Co.
Consolidated Quarry Co.
Consolidated Stone Co.
Contractors' Supply & Equipment Co.
Crippen, H. D.
Dallett, Thos. H. Co.
Davenport Locomotive Works.
Des Moines Mfg. & Supply Co. 64
Devers Cement Works. 54
Doucette Bros.
Dunning, W. D. 67
Dunn, W. E. 53
Du Pont Powder Co. 48
Durkin Reeves.
Eclat Granite Co.
Edmondson Mac. Co. 52
Elyria Mac Works, The. 60
Elyria Wood Plaster Co., The. 61
Ersham, J. B & Sons Mfg. Co. 64
Excelsior Granite Co.
Farnam Cheshire Lime Co. 8
Federal Clay Products Co. 17
Finerty, J. W.
Fisher Hydraulic Stone & Mac. Co. 56
Fowler & Pay. 7
Franklin Printing Co. 48
French, Sam'l H. 1
Frenier & Son.
Furst, Kerber Stone Co.
Gandy Belting Co., The. 45
Garry Iron and Steel Co., The. 60
Georgia Marble Co., The.
Georgia Marble Finishing Works.
German American Port Cement Co. 5
Goetz, C. W., Lime & Cement Co. 6
Grand Rapids Plaster Co. 61
Granite Ry. Co.
Granite Ex. Co.
Giudici Bros.
Haley, Matt.
Hardsocg Wonder Drill. 46
Hawkridge Bros.
Hayden Automatic Block Mac. Co. ..... 46&53
Hartranft, Wm. G. 1
Harrison Supply Co.
Henderson Route. 63
Hendricks Novelty Co.
Howard Hydraulic Cement Co. 1
Howells Mining Tool Co. 48
Houston Bros. & Co. 45
Ideal Concrete Machinery Co. 50
Illinois Steel Co. 2
Indiana Bedford Stone Co.
Ingersoll-Rand Co.
International F. & Fire Proofing Co. 53
Jeffrey Mfg. Co. 67
Johnston, August.
Kennesaw Marble Co.
Kent Mill Co. 11
Kentucky Silica Co. 45
Keystone Cement Block Mac. Co. 54
King, J. B. & Co. 61
Knutzen & Isdell. 57
Koppel, Arthur Co. 9
Kosmos Portland Cement Co. 5
Kotten, H. G.
Kritzer Company, The. 10
Krug & Co.
Lane, W. A.
Lehigh Portland Cement Co. 2
Lehigh Car & Axle Co. 49
Leusch Mfg. Co. 49
Littlejohn & Milne.
Lincoln Iron Works.
Lombard Foundry and Mac. Co.
Louisville Fire Brick Co. 17
Louisville & Henderson R. R.
McKelvey Mixer Co. 51
McKenna, David.
Macomber & Whyte Rope Co.
McMillan, C. W. & Son.
McMillan, W. & Son.
Mausex, T. F.
Manning, Maxwell & Moore.
Main Belting Co. 60
Mandt Powell Concrete Machinery Co. 59
Marquette Cement Mfg. Co. 1
Martin, Henry. 45
Marvin Electric Drill Co.
McMahon & Co.
McMillan, C. W.
McMillan, W. & Sons.
Meacham & Wright. 6
Meyer, W. D. 45
Milam & James. 56
Mills & Co.
Milwaukee Bag Co. 18
Miracle Pressed Stone Co. 51
Mitchell Clay Mfg. Co. 17
Mitchell Lime Co. 7
Morgan Construction Co. 6
Morris Sherman Mfg. Co.
Moulton, Dustin.
Mulconroy & Co.
Mundie, Alexander.
Municipal Eng. & Contracting Co. 11
National Concrete Supply Co. 56
National Brick Machinery Co. 1
National Wall Plaster Co.
New Albany Wall Plaster Co. 62
New Albany Mfg. Co.
Newaygo Portland Cement Co. 5
New York Consolidated Slate Co.
Niles-Bement-Pond Co.
Norris & Christian Stone & Lime Co. 8
Northampton Port Cement Co. 6
N. C. Granite Corporation.
N. W Expanded Metal Co.
Nuttall, R. D. Co. 60
O'Brien, P.
Ohio Fiber Machinery Co., The. 60
Ohio Lime Co., The. 7
Ohio & Western Retarder Co., The. 63
Oklahoma Granite Co.
Oliver, Wm. J., Mfg. Co.
Oolitic Stone Co., of Indiana.
Ossola, Jos. D.
Ottawa Silica Sand Co. 1
Ozark Cooperage & Lbr. Co. 18
Palmer, Noyes F. 45
Palmer, Harmon S. 58
Parry, L. L.
Patch, F. R.
Paxson, J. W Co.
Pennsylvania Structural Slate Co.
Perfection Block Mach. Co. 52
Peerless Brick Machine Co. 58
Perry-Mathews-Buskirk Stone Co.
Pettyjohn Co., The. 51
Peirce City White Lime Co. 45
Pirie, J. K.
Pitkin & Co.
Pittsburg Crushed Steel Co.
Plymouth Gypsum Co., The. 62
Power and Mining Machinery Co. 64
Pulsometer Steam Pump Co.
Quinlen, W. C.
Raymond Bros. Co., The. 12
Richards, John R.
Richardson Scale Co. 18
Ricketson Mineral Paint Works. 60
Rizzi Bros.
Robar, Fred J.
Rochester Lime Co. 8
Rogers White Lime Co.
Rowe, John A.
Ruggles-Coles Eng. Co. New York. 18
Ruxton, George.
St. Louis Portland Cement Co. 2
St. Louis Engine Co.
Sickles, Geo. B.
Schneider Granite Co.
Scioto Lime Co. 7
Shaw Electric Crane Co.
Stephens & Gerrard.
Shepherd & Parker. 17
Shoop, S. W. & Co. 18
Simpson Cement Mold Co. 50
Smidth, F. L. 12
Smith, E. L. & Co.
Smith Bros.
Sodeatrom, J. A.
South Bend Machine Co. 50
Southern Roofing & Paving Co. 17
Spackman, Henry Eng. Co. 17
Sprague Elec. Co.
Standard Brick Mchy. Co. 16
Standard Sand & Mac. Co. 53
Star Elect. Fuse Co.
Standard Mac. Co. 54
Steam Stone Cutter Co.
Stewart Granite Works.
Stone Working Mac. Co.
Strait, John. 54
Stringer Mac. Co. 54
Stroud, E. H. & Co. 13
Stroudsburg Engine Works.
Sturtevant Mill Co. 14
Sullivan Mchy. Co.
Swindell, Wm. & Sons. 17
Sweeney Bros.
Taylor Iron and Steel Co. 12
Teasdale, R. J.
Thomas Block System.
Trow & Holden.
Union Mining Co. 1
U. S. Drying Machinery Co. 61
United States Gypsum Co.
U. S. Port Cement Co. 6
Urschel Bates Valve Bag Co.
Vulcan Grit Works.
Ward Lincoln & Co.
Warner, Chas. Co. 2
Watt Mining Car Wheel Co.
Weber Gas and Gasoline Engine.
West Leechburg Steel Co.
Western Cement Co. 5
Western Lime Co. 7
Wetmore & Morse Granite Co.
Wheeling Wall Plaster Co. 61
Whitehall Port. Cement Co. 4
Wichita Coal & Material Co. 52
Williams, C. K. & Co. 18
Williams Patent Crusher & Pulverizer Co. 49
Winget Concrete Mac. Co. 53
Wittekind, H. C. 51
Woodbury Granite Co.
Woodville White Lime Co., The. 9
Wonham-Major Eng. Works.
Wulff, W. C. & Co. 60
Yale & Towne Mfg. Co.
Young & Kenwright.
Young Bros.

Business Directory.

AIR COMPRESSORS.

Allis-Chalmers Co.
American Air Compressor Works
Chicago Pneumatic Tool Co
Clayton Air Comp. Wrks.
Ingersoll-Rand Co., New York
Kotten, H. O.
St. Louis Steam Eng. Co.
Sullivan Machinery Co.

ARMORED HOSE.

Sprague Elect. Co
Mulconroy & Co

BAGS.

Milwaukee Bag Co.

BALL MILLS.

J. R. Alsing Co.
The Allis-Chalmers Co.
Power and Mining Machinery Co.

BELTING.

Chicago Belting Co.
Main Belting Co.
Sandy Belting Co., The

BLOCK CHAIN.

Yale & Towne Mfg. Co

BLOCKS TACKLE.

Yale & Towne Mfg. Co

BOILERS.

Aurora Boiler Works
Lombard Foundry and Mach. Co.

BOLTING SCREENS.

Jeffrey Mfg. Co.

CEMENT PORTLAND.

Atlas Portland Cement Co.
Alpha Portland Cement Co.
Buckeye Portland Cement Co.
Chickamauga Portland Cement Co.
Chicago Portland Cement Co.
German-American Portl'd Ct. Co.
Goetz, Chas. W., Lime and Cement
Hartranft, Wm. G.
Illinois Steel Co.
Kosmos Portland Cement Co.
Lehigh Portland Cement Co.
Marquette Cement Mfg. Co.
Meacham & Wright
Newaygo Portland Cement Co.
Sandusky Port. Cement Co
St. Louis Portland Cement Co.
Whitehall Portland Cement Co.
Warner, Chas., Co.

CEMENT HYDRAULIC.

Banner Cement Co.
Fowler & Pay
Western Cement Co.

CONCRETE BLOCK MACHINERY.

Atlas Cement Machinery Co
American Hydraulic Stone Co. The
Cement Machinery Mfg. Co.
Cement Machinery Co.
Concrete Stone and Sand Co.
Century Cement Machinery Co.
Devers Cement Works
Dunn, W. E.
Edmondson Mac Co.
Fisher Hydraulic Stone & Ma. Co
Hayden Automatic Block Machine
Ideal Concrete Machinery Co.
Knutzen & Isdell
Keystone Cement Block Machine Co
Mandt Powell Concrete Mchy. Co.
Milam & James
Miracle Pressed Stone Co.
Palmer, Harmon S.
Palmer, Noyes F.
Perfection Block Mac. Co.
Pettyjohn Co., The
Simpson Cement Mold Co.
Standard Sand & Mach. Co., The
Stringer Machine Co.
Strait, John.
Winget Concrete Machine Co.
Wichita Coal & Material Co., The

CEMENT BRICK MACHINERY.

Peerless Brick Mac. Co.

CEMENT MACHINERY.

Allis-Chalmers Co.
J. R. Alsing Co.
F. G. Smidth & Co., New York.
Jeffrey Mfg. Co.
Kent Mill Co.
Power and Mining Mchy. Co.
Ruggles-Coles Eng. Co.
Swindell, Wm., & Bros.

CEMENT PIPE MOULDING PRESS.

F. L. Smidth & Co.

CHANNELING MACHINE.

Ingersoll-Rand Co.
Steam Stone Cutter Co.
Sullivan Machinery Co.

CHILLED STEEL SHOT.

Pittsburg Crushed Steel Co.
Harrison Supply Co.
Vulcan Grit Works
R. C. Bowers Granite Co.

CLAY WORKING MACHINERY.

National Brick Machinery Co.

CONCRETE MIXERS.

Contractors Supply & Equipm't Co.
International Concrete Mixer Co.
McKelvey Mixer Co
Municipal Eng. & Contract'g Co.
The Standard Mac. Co.

CONCRETE WORK.

L. L. Parry

CONTRACTORS SUPPLIES.

Houston Bros. Co., Pittsburg, Pa.

COLORINGS, BRICK AND MORTAR.

Chattanooga Paint Co.
Clinton Metallic Paint Co
Ricketson Mineral Paint Co
Williams, C. K. & Co.

CONVEYORS.

Ersham, J. B. & Sons Mfg. Co
Jeffrey Mfg. Co.
Power and Mining Machinery Co.
Standard Sand and Mch. Co.
Allis-Chalmers Co.

COOPERAGE.

Bell, Edwin Co., The
Ozark Copperage & Lumber Co

CRANES, ELECTRIC.

Case Mfg. Co
Niles-Bement-Pond Co
Shaw Elec. Crane Co.
Yale & Towne Mfg. Co.

CRUSHED STEEL.

Pittsburg Crushed Steel Co.

CRUSHERS.

Allis-Chalmers Co.
J. R. Alsing & Co.
Austin Mfg. Co.
Butterworth & Lowe
Des Moines Mfg. and Supply Co.
Ersham, J. B. & Sons Mfg. Co.
Jeffrey Mfg. Co., The
Kent Mill Co.
Martin, Henry
Power and Mining Machinery Co.
Sturtevant Mill Co.
Taylor Iron and Steel Co
Williams Patent Crusher and Pulverizer Co.

CUT GEARS.

Nuttall, R. D. Co.

DERRICKS.

Haley, Matt
Steam Stone Cutter Co.

DRAIN TILES.

American Sewer Pipe Co.

DRILLS.

Chicago Pneumatic Tool Co
Crippen, H. D.
Hardsocg Wonder Drill Co
Howell Mining Tool Co.
Ingersoll-Rand Co.
Marvin Electric Drill Co.
Steam Stone Cutter Co.
Sullivan Machinery Co.

DRYERS.

Alsing, J. R. Co.
American Process Co.
Bartlett, C. O., & Snow Co., The
Biles Dryer Co.
Ruggles-Coles Eng. Co.
Standard Sand and Mac. Co.
U. S. Drying Mchy. Co.

DRYER CARS.

Chase Fdy. and Mach. Co.
Cleveland Car Co.
Power and Mining Mchy. Co
Wonham-Major Eng. Works

DUMP CARS.

Allis-Chalmers Co.
Atlas Car Mfg. Co.
Cleveland Car Co.
Koppel, Arthur Co.
Oliver, Wm. J., Mfg. Co.
Watt Mining Car Wheel Co
Wonham-Magor Eng. Works

DUMPING BUCKETS.

Atlas Car Mfg. Co., The
Wonham-Magor Eng. Works

DYNAMITE AND POWDER.

Aetna Powder Co.
Dupont Powder Co.

ENGINEERS.

Bates Engineering Co
Shoop, S. W. & Co
Spackman, Henry Eng. Co

ERADICATOR GRANITE STAIN.

Finerty, J. W.

EXCELSIOR.

Caummisar, T. C. & Sons.

FIBRE MACHINERY.

Concrete Eng. and Equip. Co.
Elyria Mac. Works, The
Ohio Fibre Mchy. Co., The

FIRE BRICK.

Ashland Fire Brick Co.
Federal Clay Product Co.
Louisville Fire Brick Co.
Mitchell Clay Mfg. Co.
J. W. Paxson Co
Union Mining Co.

FLUE LINERS.

American Sewer Pipe Co.

FOUNDRY WORK.

Lombard Foundry and Mac. Co.

FUZES.

Aetna Powder Co.
Star Elect. Fuse Co.

GAS AND GASOLINE ENGINES.

Allis-Chalmers Co.
Backus Gas Engine Co.
Henricks Novelty Co.
Power and Mining Machinery Co.
Weber Gas and Gasoline Engine

GAS PRODUCERS.

Backus Gas Engine Co.
Morgan Construction Co.
Power and Mining Machinery Co.

GRAVE VAULTS.

Parry, L. L.

GYPSUM.

Grand Rapids Plaster Co.
Plymouth Gypsum Co., The
United States Gypsum Co.

GRANITE

Abbiatti, E. & Bros.
Ahern, James
Anderson Bros. & Johnson
Anderson, A. & Sons
Averill Granite Co.
Barre White Granite Co.
I. W. Bates
Big Four Company
Bilodeau, J. O.
Bishop, Joseph
Boutwell, Milne Varnum Co., The
Bowers, R. C., Granite Co.
Doucette Bros.
Drennan & Brown
Eclat Granite Co.
Excelsior Granite Co.
Giudici Bros.
Granite Ex. Co.
Mannex, T. F.
Mills & Co.
Oklahoma Granite Co.
Pirie, J. K.
John R. Richards
Rizzi Bros.
Robar, Fred J.
Sweeney Bros.
Smith Bros.
Smith, E. L. & Co.
Schneider Granite Co.
Stewart Granite Works
Wetmore & Morse Granite Co.
Woodbury Granite Co.

GYPSUM MACHINERY.

Butterworth & Lowe
Des Moines Mfg. and Supply Co.

HARDENING CYLINDERS.

Broomell, Schmidt & Steacy Co.
J. R. Alsing Co.

HOISTING MACHINERY.

Allis-Chalmers Co.
Shaw Elec. Crane Co.
Case Mfg. Co
Niles Bement Pond Co

HOISTS DOUBLE FRICTION.

Jeffrey Mfg. Co.
Power and Mining Mchy. Co

HOSE.

Dallett, Thos. H. Co.
Mulconroy & Co
Sprague Elec. Co

HYDRATING CYLINDERS.

J. R. Alsing Co.
American Hydrating Co., The
Clyde Iron Works
Kritzer Co.
National Brick Machinery Co.

HYDRATING MACHINES.

Clyde Iron Works
National Brick Machinery Co.

KILNS.

Allis-Chalmers Co.
Shoop, S. W. & Co.

LIME.

Ash Grove White Lime Associatie
Central Ohio Lime & Stone Co.The
Cleveland Builders Supply Co
Farnam "Cheshire" Lime Co.
Fowler & Pay
Goetz, C. W., Lime & Cement Co.
Mitchell Lime Co.
Norris & Christian St'e & Lime Co.
Ohio Lime Co., The
Pierce City White Lime Co.
Rochester Lime Co.
Scioto Lime Co
Woodville White Lime Co., The

LIME BURNERS.

Morgan Construction Co.
Swindell, Wm., & Bros.

LIME HYDRATED.

Ohio & Western Lime Co., The

MARBLE.

Anderson Marble Works
Blue Ridge Marble Co.
Georgia Marble Co., The
Kennesaw Marble Co
Geo. B. Sickels Marble Co
Georgia Marble Finishing Works

METAL FLORAL WREATHS.

Osaola, Jos. D.

METAL LATH.

American Rolling Mill Co
Bostwick Steel Lath Co.

MONUMENT MANUFACTURERS.

Anderson, A. & Sons.
Bishop, Joseph
Carpenter, R. H.
Robins Brothers
Young Bros.

MONUMENT-SETTER.

Moulton, Dustin

OOLITIC LIMESTONE.

Bedford Quarries Co., The
Bedford Steam Stone Co.
Brooks-Curtis Stone Co
Consolidated Stone Co.
Furst, Kerber Stone Co.
Indiana Bedford Stone Co.
McMillan, W. & Son.
Oolitic Stone Co. of Indiana.
Perry-Matthews-Buskirk Stone Co.
Rowe, John A.

PATENTS.

Shepards & Parker

PLANERS.

Birmingham Iron Foundry
Johnston, August
Patch, F. R.

PLASTER.

Concrete Engineering and Equip.
Elyria Wood Plaster Co., The
Grand Rapids Plaster Co.
New Albany Wall Plaster Co.
Plymouth Gypsum Co., The
United States Gypsum Co.
Wheeling Wall Plaster Co.

PLASTER MACHINERY.

Butterworth & Lowe
Dunning, W. D.
Ersham, J. B. & Sons, Mfg. Co.

PNEUMATIC TOOLS.

Dallett, Thos. H. Co.
Chicago Pneumatic Tool Co
Hardsocg Wonder Drill Co
Howell Mining Tool Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.
Trow & Holden

PULVERIZERS.

J. R. Alsing & Co.
Kent Mill Co.
Raymond Bros. Co., The
Stroud, E. H. & Co.
Williams Patent Crusher and Pulverizer Co.

PUMPS.

Pulsometer Steam Pump Co.

QUARRY SUPPLIES.

Mulconroy & Co

RAILROAD MATERIAL.

Atlas Car and Mfg. Co., The
Broomell-Schmidt & Steacy Co.
Koppel, Arthur & Co.
Wonham-Magor Eng. Works

ROOFING MATERIAL.

Garry Iron and Steel Co., The
Southern Roofing and Paving Co.
Wulff, W. C. & Co.

RUBBING BEDS.

Lincoln Iron Works
New Albany Mfg. Co.

SAND DRYERS.

J. R. Alsing Co.
Bartlett & Snow Co., The
National Brick Machinery Co.
Ruggles-Coles Eng. Co., New York
Standard Sand and Mach. Co.

SAND-LIME BRICK MACHINERY.

American Clay Work'g Mach. Co.
American Sand-Lime Brick Co.
National Brick Machinery Co.

SAND PUMP.

Allis-Chalmers Co.
Frenier & Son

SAW BLADES.

Stone Workers Supply Co., The
West Leechburg Steel Co.

SAWS DIAMOND.

Anderson, Geo. & Co.

SCREENS.

Allis-Chalmers Co.
Butterworth & Lowe
Des Moines Mfg. & Supply Co.
Ersham, J. B. & Sons Mfg. Co.
Jeffrey Mfg. Co.
Power and Mining Machinery Co.

SCULPTORS.

Rizzi Bros.
Young & Kenwright

SEWER PIPE.

Stroudsburg Engine Works

SLATE.

McKenna, David
New York Consolidated Slate Co.
Penna. Structural Slate Co.

SOAP STONE FINISH.

American Soap Stone Finish Co.

STONE.

Carthage Superior Limestone Co.
Caden Stone Co.

STONE WORKERS SUPPLIES.

Bowers, R. C., Granite Co.
Harrison Supply Co.

STONE SAWS.

Lincoln Iron Works
Stone Workers Supply Co., The
Stone Working Mac. Co.

STONE TOOLS.

Ingersoll-Rand Co.

STONE WORKING MACHINERY.

Chicago Pneumatic Tool Co.
Geo. Anderson & Son
Aug. Johnston
Lincoln Iron Works
New Albany Mfg. Co.
F. R. Patch
Stone Working Machine Co
Steam Stone Stone Cutter Co.

STUCCO PETARDER.

Binns Stucco Retarder Co.
Chemical Stucco Retarder Co.
Ohio Retarder Co., The

TROLLEYS.

Yale & Towne Mfg. Co

TUBE MILLS.

Allis-Chalmers Co.
J. R. Alsing Co.

WALL TIES.

Houston Bros. & Co.

WIRE ROPE.

Macomber & Whyte Rope Co
Steam Stone Cutter Co.

Done on the Hercules

The World's Greatest Cement Stone Machine.

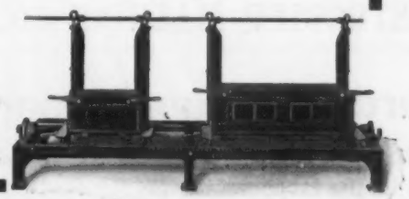
This is a reproduced photograph of the Weldon Apartment house at Greenfield, Mass., built of Cement Stone made on the Hercules.

On this machine, so simply constructed, the most marvelous results are obtained. It will make solid or hollow blocks, pillars, sills, lintels, coping or ornaments of any kind from 2 inches up to 6 feet. It will make two blocks of the same size and design or of different sizes and designs at one and the same time.

The Hercules will make more stone and better stone in less time and for less money than any other machine. We can't prove that statement here, but if you will take the trouble to send for our handsomely illustrated 68 page catalog, it won't take but a few minutes to convince you. Ask for Catalog L.

Century Cement Machine Co.

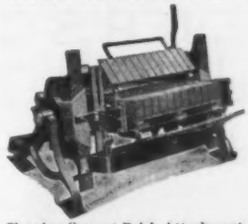
179 West Main Street,
ROCHESTER, N. Y.



The Latest—Four Concrete Machines in One.

1. **A Face-Down Machine**—None equal it in advantages.
2. **An Upright Machine**—A marvel of speed, economy and wide range of adjustments.
3. **A Two-Piece Block Machine**—Exceedingly practical and makes two blocks at once.
4. **A Cement Brick Machine**—Meets all requirements.

Showing Face-Down Position.



Showing Cement Brick Attachment.

Another Valuable Feature.

Its product makes the only triple air space wall. The latest and best thing out. Absolutely moisture proof

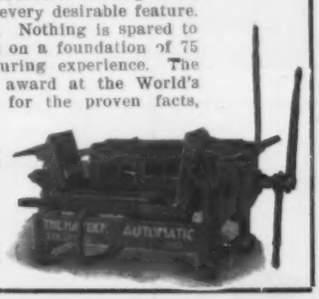
The Winget Company furnishes all necessary machinery for a complete up-to-date Concrete Block Plant, including mixers and tampers. For full information address

THE WINGET CONCRETE MACHINE COMPANY, :: COLUMBUS, OHIO.

Hayden—the Standard of Merit

the Hayden Machine is built on right principles. Nothing that would go to make the BEST machine is spared.

The Hayden Automatic Concrete Building Block Machine leads the field in every desirable feature. It is *face down*, of course. Nothing is spared to make it the best. It rests on a foundation of 75 years successful manufacturing experience. The machine received highest award at the World's Fair at St. Louis. Send for the proven facts, Catalog "F."



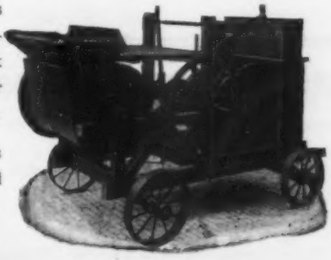
The Hayden Automatic Block Machine Company

COLUMBUS, OHIO

New York and Foreign Office, Hayden Automatic and Equipment Co., 26 Courtland Street, New York. BUY A HAYDEN FOR RESULTS.

The American Mixer Mixes anything

The American Mixer is built for the practical contractor, for any work in the mixing line that he may require, The revolving plows inside the drum do the work, dividing and blending the aggregates, whether mortar, plaster, cement finish or top coating of any kind and you do not have to rely on the simple rolling of the materials down the side of the drum like in old style revolving drum mixers. They are superficial at best. The AMERICAN does the work thoroughly whether the mix is dry, medium or wet, fine or coarse.



Our catalog tells all about it—send for Catalog "I".

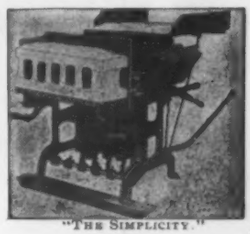
The International F. and Fireproofing Co.

Columbus, Ohio.

IT IS A QUESTION OF ECONOMY

in buying a **Concrete Building Block Machine** the same as any thing else. You want the **best,** at the same time the **cheapest.** The **SIMPLICITY** fills both of these requirements.

Write for catalogue and further information.



"THE SIMPLICITY."

The Standard Sand & Machine Company,

Manufacturers of Labor Saving Machinery.

Address Dept. "D." CLEVELAND, OHIO.

The Dunn Hollow Block Machine

COMPLETE in every detail. Especially adapted to the use of the Block manufacturer. Making blocks in all widths, lengths and many designs, including Sills, Lintels, Pier Blocks, etc.

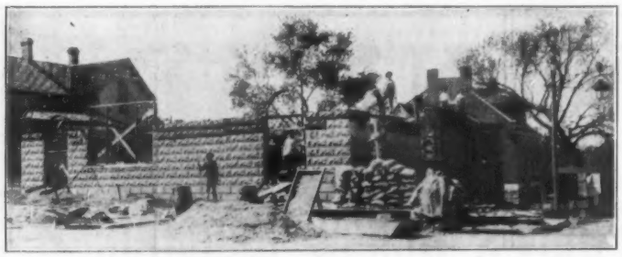
These Machines Combine the Side Face and Face Down Systems. **Price $100**

MASONS AND BUILDERS BLOCK MACHINE

MAKES blocks from 2 to 12 inches in width, up to 20 inches long in different designs. No expensive iron pallets required. A practical, rapid and economical machine for the Mason and Builder. No machine at any price makes better blocks or makes them more rapidly or economically. PRICE..... $40

WRITE FOR CATALOGS.

W. E. DUNN & CO., Sole Manufacturers in the U. S. 350 W. Fullerton Ave. Chicago, Ill.



Central Christian Church, Cor. 7th and Armstrong Ave., Kansas City, Kansas.

The MILAM Concrete Wall Building Device

The Milam device adopts the wet process and by so doing gets the full benefit of the strength of the cement and may be used with sand or any kind of gravel, crushed rock or cinders—makes hollow or solid walls from 9 to 20 inches wide with smooth, panel or stone pitched faces.

This device is adapted to the use of reinforcing steel.

Easily operated—no experts required. No breakage or wastage.

BOOKLET MAILED ON REQUEST

Milam and James,

1017-19 North Front St.,
KANSAS CITY, KANSAS.

Residence of Ed. N. Dunning,
6th and Everett St., Kansas City, Kansas.

Problems Solved

Coloring, Quick Hardening, Waterproofing

3 Important Things in the Concrete Industry 3

The results of practical tests and long experience enable us to make the following absolute reliable offers.

1. A **simple** and inexpensive method of **hardening** quick curing) cement brick and blocks in **3 or 4 days** instead of 30, without adding to the cost of manufacture.

THINK WHAT THIS MEANS!

LESS stock to make up and carry, LESS capital for material and labor and LESS room required for storage

No manufacturer can afford to be without this knowledge.
Exclusive rights only will be sold.

2. A formula for waterproofing, cheap and effective, making the product impervious to water and removing one of the principal objections urged against concrete.

3. An assorted supply of reliable colors [over 700 lbs.] in Reds, Browns, Buffs or Yellows and Blacks with directions for use.

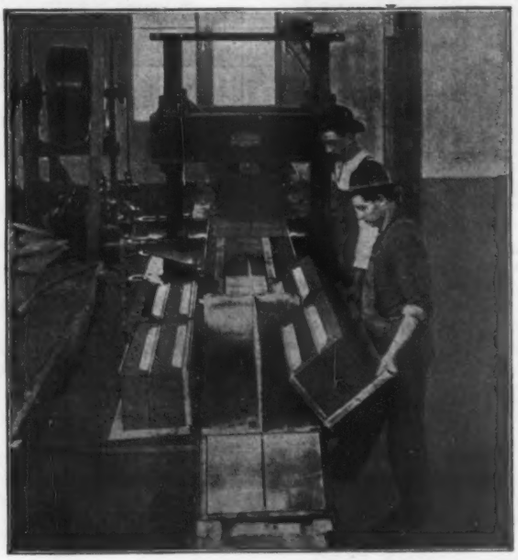
National Concrete Supply Co.
Dept. G. 1 Madison Ave. NEW YORK

The Fisher Hydraulic Stone System

A Success
A Money Maker
No Experiment

This outfit consists of a genuine HYDRAULIC PRESS, and carefully constructed machinery, and has a SHIPPING WEIGHT OF 25,000 POUNDS.

The cut illustrates the Fisher machine operating and delivering eight angular blocks at one pressing, requiring less than one minute to pound them into shape, under a 200-ton pressure.

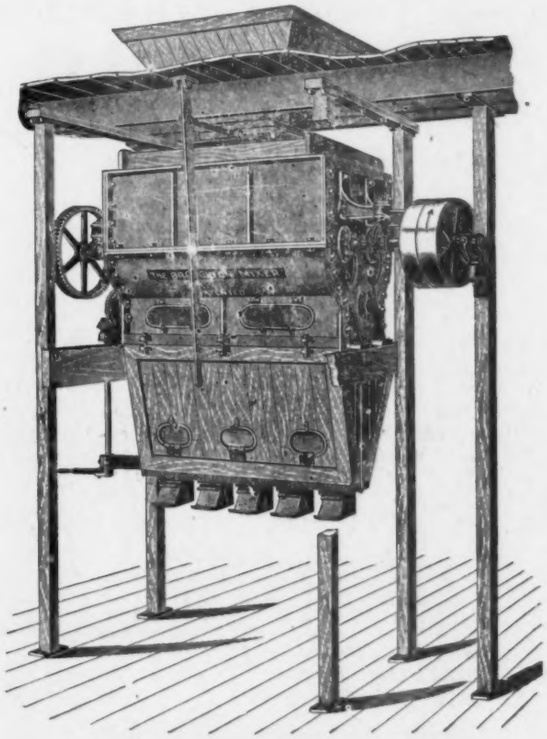


The Only Machinery Put Out for the Manufacture of Concrete Blocks

This outfit is capable of PRODUCING 1,500 CUBIC FEET of material, formed into the shape desired, in ONE DAY'S WORK.

APPLY FOR FURTHER INFORMATION.

FISHER HYDRAULIC STONE AND MACHINERY CO.
Builder's Exchange Building :: BALTIMORE, MARYLAND

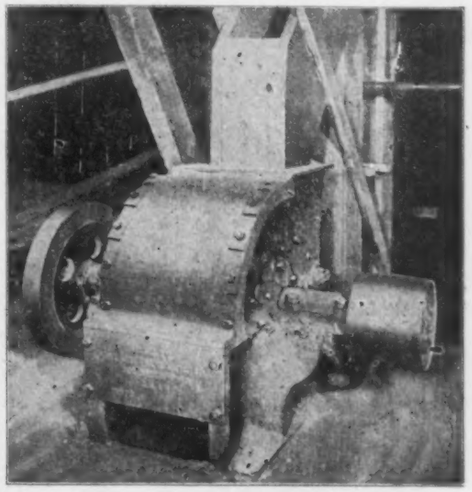


The most thorough and efficient Mixers of Plaster, Cement and Dry Materials. Send for Circular.

W. D. DUNNING, Water St., **Syracuse, N. Y.**

JEFFREY PULVERIZER

(SWING HAMMER)



Quick Results

•

Cheap Maintenance

•

Make Inquiry

•

Catalogues Free

IN OPERATION—GRINDING GROG.

Manufactured by

The Jeffrey Manufacturing Co.,

COLUMBUS, OHIO, U. S. A.

Makers of

Elevating - Conveying - Screening - Drilling Machinery.

SAND-LIME BRICK

We have had more experience in equipping, starting and operating SAND-LIME BRICK PLANTS than any other concern in this country, and we make STRONGER GUARANTEES.

ALL MONEY REFUNDED if brick made in regular work are not equal to samples submitted. No risks and no expensive experimenting under our method of installing plants. It is the **only safe method** for beginners in any new industry. Our latest illustrated Booklet gives full particulars. Sent free.

AMERICAN SAND-LIME BRICK CO.,

1306 Great Northern Building, Chicago

Eastern Branch Office, 39 Cortland Street, New York City.